

# Universal Service Fund (USF) Assessment

## A Study on the Impacts and Opportunities of USF Reforms in Maine

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The analysis, recommendations and any opinions expressed in this report are Sewall's alone.

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<sup>1</sup> <http://www.fcc.gov/>; <http://www.usac.org/default.aspx>



## 1.0 Executive Summary

Maine receives approximately \$46 million in annual funding from the Universal Service Fund (USF) to support affordable access to telecommunications services statewide.<sup>2</sup> Distributed through the USF's four major programs—High Cost, Low Income, Schools and Libraries, and Rural Health Care—the fund provides Maine telecommunications carriers with a significant portion of their annual operating revenues. Since the 2010 release of the National Broadband Plan, the FCC has been in the process of modernizing these programs, shifting the focus on basic, ubiquitous telephone services to that of improving broadband access. The reforms have redirected and limited the various funds, establishing higher accountability and greater contribution, including significant investment, from carrier participants. As the reforms are fully implemented in the next few years, they are expected to create both opportunities and challenges for Maine rural providers, State policy makers, schools and libraries, rural healthcare facilities, and Maine citizens who benefit from this support.

To understand and address the impacts of USF reform in Maine, the ConnectME Authority commissioned this study as part of the Authority's multi-year federally funded Broadband Mapping and Inventory Project.<sup>3</sup> The study's objectives were to:

- Evaluate the existing and potential future impacts of USF reform on Maine stakeholders
- Assess the strength of Maine's positioning for USF support, identifying the potential gap in Maine's future funding resources
- Provide recommendations for the Authority's use in developing Maine strategy, policy and programs that align with and maximize future USF funding for broadband

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<sup>2</sup> The annual funding figure is a five-year average of USF disbursement to Maine using data from USAC's annual reports (2009-2013):

<http://www.universalservice.org/about/tools/publications/annual-reports/default.aspx>

<sup>3</sup> This study fulfills one part of the Broadband Mapping and Inventory Project contract amendment "to identify and implement best practices."

<http://www2.ntia.doc.gov/grantee/state-of-maine-connectme-authority>

## 1.1 TASK AND METHOD

This report summarizes the findings from research on USF reforms and from analysis of their impacts on Maine. It is organized into four main sections:

Section 2.0 provides background information on the USF, its four legacy programs and their current and anticipated transformations.

Section 3.0 reviews Maine's status as an USF recipient and its differentiation among New England states, evaluates the impact of reforms on Maine's annual support, and assesses the strength of Maine's positioning for future funding, identifying potential gaps in Maine's funding resources.

Section 4.0 provides recommendations for the Authority's use in developing strategies that address the challenges and opportunities of USF reform, as part of its mission to facilitate the universal availability of broadband in Maine.

Section 5.0 provides additional funding sources that can supplement USF support and lists resources for further research on USF programs.

The information on which this report is based was acquired through online research and telephone interviews of subject matter experts on the USF, Maine telecommunications programs and policy, and the telecommunications field in general. The FCC and USAC web sites were primary sources for information on USF program reforms and for statistical data on USF funding commitments and disbursements.<sup>4</sup>

## 1.2 SUMMARY OF RESULTS

A summary of key findings from the study of USF reforms and their impacts on Maine follows. Background information, details and supporting data are provided in the body of the report (Section 3.3).

### *Impacts of Program Reform*

Since the FCC began modernizing the USF in 2010, Maine has experienced some loss in funding from legacy programs that support the delivery of telecommunications services. At the same time, Maine stakeholders have been eligible to pursue, and in some instances have benefited from, new opportunities for funding from programs that specifically support broadband. Given that the reforms are a work in progress for several more years, the funding situation is highly fluid. Tracking of and informed response to opportunities during this time will be critical.

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<sup>4</sup> <http://www.fcc.gov/>; <http://www.usac.org/default.aspx>

Major impacts of USF program reform on Maine stakeholders to date are reviewed below according to program.

- *High Cost Program.* Maine rural incumbent carriers have begun to experience a loss in High Cost Program funding for copper-wire-based telephony operations and maintenance from legacy mechanisms, which have been frozen, capped, eliminated, or redirected toward broadband access services. Maine's price cap carrier FairPoint Communications,<sup>5</sup> and its local exchanges, has recovered this funding temporarily through the transitional Frozen High Cost Fund, with the provision that an ever-increasing percentage be used for broadband buildout. Although additional funding is available for buildout through the new Connect America Fund, FairPoint denied most of the funding under Round 1 of Phase I as the specified carrier investment obligations were too high. FairPoint accepted funding under Round 2, but envisions denying Phase II support due to the cost of required investment, opening the door to nontraditional eligible entities, such as cable operators, satellite providers, and electric cooperatives. In that event, it is likely that the FCC will segment FairPoint's service territory and auction off the pieces to other entities for the lowest bid.<sup>6</sup>

Smaller rate of return carriers in Maine are experiencing loss from the reduction of legacy High Cost Program intercarrier compensation mechanisms. Some but hardly all of these cuts are offset by the Connect America Intercarrier Compensation funding, provided carriers offer their customers broadband service with speeds of 4 Mbps down and 1 Mbps up upon their reasonable request. The FCC has proposed to establish a Connect America Fund for smaller carriers and is currently seeking comment on how to transition them to this new form of support. In the meantime, the uncertainty of the funding situation has led some carriers in Maine to reduce network investments.

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<sup>5</sup> USAC identifies a price cap carrier as a carrier limited in its ability to raise rates on the basis of an FCC-defined formula and not subject to rate base/rate-of-return regulation. A rate-of-return carrier is a carrier that is allowed to set rates on various products and services so that it earns no more than the FCC-authorized rate-of-return. Generally price cap carriers are companies with larger service areas in any given state (e.g., FairPoint in Maine) than those of rate-of-return carriers (e.g., Oxford Telephone, Pine Tree Telephone in Maine). <http://www.usac.org/hc/legacy/incumbent-carriers/step01/default.aspx>.

<sup>6</sup> As of the FCC's 10 June 2014 Omnibus Order (Report and Order, Declaratory Ruling, Order, Memorandum Opinion and Order, Seventh Order on Reconsideration, and Further Notice of Proposed Rulemaking), FairPoint as Maine's price cap carrier will be eligible to participate in the Phase II competitive bidding process if it declines the offer of statewide model-based support. [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0610/FCC-14-54A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0610/FCC-14-54A1.pdf)

Maine has benefited from a \$1.4 million award to US Cellular under a new component of the High Cost Program—the Mobility Fund. Three areas of Washington County will have access to at least 3G mobile services as a result. It is anticipated that Phase II of this fund program will support continued deployment and preservation of 4G in areas that would not otherwise have such service, providing more opportunity for Maine.

- *Low Income Program.* Reforms to Lifeline support reduced Maine’s subsidy for discounts on telecommunications to low income consumers by almost \$5 million from 2012 to 2013. The termination of Linkup for initial connection represented a smaller but still significant loss in annual support. Nevertheless the funding for low income support under Lifeline remains largely an untapped resource for Maine consumers.
- *Schools and Libraries Program (E-rate).* The 2010 E-rate order allowed Maine schools and libraries to contract for dark fiber. Long-term transport contracts, however, have prevented these institutions from being able to leverage this new flexibility to any great extent. They expect significant competition in the next funding cycle due to the ability to lease fiber. The FCC’s support of President Obama’s ConnectED initiative should create funding opportunities for capital projects for both fiber buildout and network equipment (WiFi) inside of schools and libraries.
- *Rural Health Care Program.* The impacts of Rural Health Care Program reforms on beneficiaries in Maine are essentially positive, as changes to the legacy program add to rather than subtract from the support already provided. The addition of the Rural Health Care Pilot Program—an antecedent to the new Healthcare Connect Fund—has made the biggest impact. Two rural healthcare consortia headquartered in Maine have received a total of \$6.6 million in funding for the design and implementation of broadband networks that connect primarily not-for-profit healthcare facilities in Maine and in Maine, New Hampshire and Vermont.

### ***Maine’s Positioning as USF Recipient***

To assess the potential gap in Maine’s resources created by USF reforms, it is necessary to review Maine’s strength and weaknesses, opportunities and threats as an USF recipient. Table 1.1 summarizes this positioning. (For more detail, see Section 3.4.1.)

**Table 1-1: Maine as USF Recipient: Strengths, Weaknesses, Opportunities and Threats**

| <b>Maine as USF Recipient--SWOT Analysis</b>                                        |                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strength</b>                                                                     | <b>Explanatory Notes</b>                                                                                                                                                                                                                                                                                          |
| <b>High eligibility for USF support</b>                                             | <ul style="list-style-type: none"> <li>• Maine is rural and has low income and Tribal populations</li> <li>• Maine receives as much or more funding from the USF than other New England states, with the exception of Massachusetts, and more net benefit annually (funding in excess of contribution)</li> </ul> |
| <b>State funds supplementary to federal support</b>                                 | <ul style="list-style-type: none"> <li>• Maine Universal Service Fund (MUSF)--\$8 million annually</li> <li>• Maine Telecommunications Education Access Fund (MTEAF)--\$4 million annually</li> <li>• ConnectME Authority Grant Fund Program--\$1 million annually</li> </ul>                                     |
| <b>Centralized, independent State agency for broadband</b>                          | <ul style="list-style-type: none"> <li>• ConnectME Authority manages broadband development programs, information dissemination, funding for broadband buildout, FirstNet public safety network effort in Maine</li> </ul>                                                                                         |
| <b>Schools and library networking</b>                                               | <ul style="list-style-type: none"> <li>• Maine Schools and Library Network (MSLN) manages centralized, coordinated effort behind E-rate funding</li> </ul>                                                                                                                                                        |
| <b>Other funding Initiatives</b>                                                    | <ul style="list-style-type: none"> <li>• USDA Distance Learning and Telemedicine grants</li> </ul>                                                                                                                                                                                                                |
| <b>Maine State Leadership support for broadband</b>                                 | <ul style="list-style-type: none"> <li>• US Senator Angus King</li> <li>• Maine Office of Public Advocate Senior Counsel Wayne Jortner</li> </ul>                                                                                                                                                                 |
| <b>Shrinking percentage of unserved areas</b>                                       | <ul style="list-style-type: none"> <li>• 93.1% of street locations with access to broadband at speeds of 768 kbps or above<sup>7</sup></li> </ul>                                                                                                                                                                 |
| <b>Availability of high fiber network</b>                                           | <ul style="list-style-type: none"> <li>• 1,100-mile federally funded 3 Ring Binder Project built and leased by Maine Fiber Company</li> </ul>                                                                                                                                                                     |
| <b>Grass-roots broadband healthcare initiatives</b>                                 | <ul style="list-style-type: none"> <li>• 2 USF Rural Health Care Pilot programs, Maine DHHS Healthcare Connect consortium effort under way</li> </ul>                                                                                                                                                             |
| <b>Other statewide broadband support groups</b>                                     | <ul style="list-style-type: none"> <li>• Broadband Infrastructure Deployment Working Group</li> </ul>                                                                                                                                                                                                             |
| <b>Weakness</b>                                                                     | <b>Explanatory Notes</b>                                                                                                                                                                                                                                                                                          |
| <b>Dominant carrier dependence on High Cost funding</b>                             | <ul style="list-style-type: none"> <li>• FairPoint is losing USF High Cost support for its network operations and maintenance and may not accept Connect America Phase II funding due to spend obligations for buildout investment</li> </ul>                                                                     |
| <b>Small carrier dependence on High Cost funding</b>                                | <ul style="list-style-type: none"> <li>• Small carriers have experienced cuts in High Cost support for maintaining copper wire networks and no additional or compensatory support for broadband investment</li> </ul>                                                                                             |
| <b>Necessity for carrier services to focus on economic clusters of population</b>   | <ul style="list-style-type: none"> <li>• High cost and extremely high cost areas have greater need; densely populated areas provide greater return on investment</li> </ul>                                                                                                                                       |
| <b>Predominance of broadband DSL over copper</b>                                    | <ul style="list-style-type: none"> <li>• Limited amount of fiber buildout—both fiber to the premise or house and infrastructure buildout within schools and libraries</li> </ul>                                                                                                                                  |
| <b>Diluted service quality standards for copper-wire network maintenance</b>        | <ul style="list-style-type: none"> <li>• Less carrier incentive to maintain high standards of service when state standards are lowered and federal support is less</li> </ul>                                                                                                                                     |
| <b>Unserved/ underserved broadband speed definitions low</b>                        | <ul style="list-style-type: none"> <li>• FCC proposes the definition of unserved from 4 Mbps to 10 Mbps; is considering 25 Mbps</li> <li>• Maine’s speed definition should be at least comparable with the FCC</li> </ul>                                                                                         |
| <b>Lack of integrated, policy-based investment support for ubiquitous broadband</b> | <ul style="list-style-type: none"> <li>• Simultaneous, disconnected grass-roots efforts in broadband buildout lose the cost advantages of combined effort and shared resources</li> </ul>                                                                                                                         |

<sup>7</sup> *Developing Broadband in Maine: Baseline Update 2013.*  
[http://www.maine.gov/connectme/grants/ntia/docs/2013\\_BaselineUpdate.pdf](http://www.maine.gov/connectme/grants/ntia/docs/2013_BaselineUpdate.pdf)

| <b>Maine as USF Recipient--SWOT Analysis (continued)</b>                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Weakness</b>                                                                           | <b>Explanatory Notes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Shrinking MTEAF supplementary support</b>                                              | <ul style="list-style-type: none"> <li>Carrier intrastate revenue, on which MTEAF is based, is shrinking</li> <li>Other sources of local contribution for E-rate funding is necessary</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Low broadband ranking nationally</b>                                                   | <ul style="list-style-type: none"> <li>Low ranking indicates lack of investment relative to other states</li> <li>Maine is 37<sup>th</sup> in broadband deployment<sup>8</sup></li> <li>Maine is 51<sup>st</sup> in average household broadband download speeds (14.36 Mbps); 49<sup>th</sup> in average household upload speeds (3.28 Mbps)<sup>9</sup></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Opportunity</b>                                                                        | <b>Explanatory Notes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Authority well positioned to develop State broadband policy</b>                        | <ul style="list-style-type: none"> <li>Authority is in position to lead the development of vision, policy and integrated financial support for ubiquitous broadband, coordinating with other State agencies, including MPUC and MOPA</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Maine well positioned to take advantage of existing and future USF program funding</b> | <ul style="list-style-type: none"> <li>Upcoming pilot projects can provide additional one-time funding</li> <li>Connect America Fund (CAF) programs will be rolled out:                             <ul style="list-style-type: none"> <li>Broadband Rural Development Experiments proposals in 2014</li> <li>CAF Phase II by end of 2014</li> <li>Potential funding for middle-mile projects on Tribal lands in 2015</li> <li>CAF Remote Areas Fund in 2016</li> <li>Mobility Fund Phase II rollout TBD</li> </ul> </li> <li>Maine is eligible for additional Lifeline subscriptions</li> <li>Opportunities exist with Rural Health Care Program:                             <ul style="list-style-type: none"> <li>Growth of New England Telehealth Consortium</li> <li>Health Care Connect funding to support new network consortia buildout (Maine DHHS application)</li> <li>Skilled Nursing Facilities Pilot Program rollout TBD</li> </ul> </li> <li>E-rate 2.0 with support for ConnectED (potential demo projects and public-private initiatives) TBD</li> </ul> |
| <b>Threat</b>                                                                             | <b>Explanatory Notes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Diminishing frozen support to Maine dominant incumbent carrier</b>                     | <ul style="list-style-type: none"> <li>Lack of funding to operate and maintain copper-based network for telecommunications and broadband DSL creates lack of incentive to invest in low-profit, high cost areas</li> <li>Carriers' ability to deliver high quality services is compromised</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Contribution requirements of High Cost reforms outweighing benefits of support</b>     | <ul style="list-style-type: none"> <li>Rejection of CAF Phase II funding can lead to FCC reverse auction that awards subsidies to non-traditional carriers, increasing competition</li> <li>Non-traditional providers—cable operators, satellite providers, electric cooperatives—will be eligible for support</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Extremely high cost areas in Maine limited opportunities for funding</b>               | <ul style="list-style-type: none"> <li>Many Maine locations will be funded only through CAFII competitive bidding or the much smaller Remote Areas Fund</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Diminishing intercarrier compensation (ICC) payments</b>                               | <ul style="list-style-type: none"> <li>Traditional ICC revenues to small carriers are declining with transition to bill and keep framework</li> <li>Small carriers have not received compensatory support through CAF for broadband buildout investment</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Loss of Linkup funding</b>                                                             | <ul style="list-style-type: none"> <li>Competitive wireless carriers receive 80 percent of funding (2Q2013)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>No additional federal funding for ConnectED effort planned</b>                         | <ul style="list-style-type: none"> <li>Meeting President Obama's five-year goal is largely dependent upon existing E-rate subsidy and individual corporate donations</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Limited E-rate Priority 2 support</b>                                                  | <ul style="list-style-type: none"> <li>Maine students have limited access within schools and libraries</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Lack of integrated policy-based investment support in Maine</b>                        | <ul style="list-style-type: none"> <li>No statewide plan for 100 percent access increases total cost of buildout, losing benefits from economic growth and other gains</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

<sup>8</sup> <http://www.itif.org/publications/2012-state-new-economy-index>

<sup>9</sup> <http://www.netindex.com/download/2,1/United-States/>

### ***Maine's Resource Gap***

Given Maine's positioning as an USF recipient, specifically the weaknesses and threats outlined in Table 1.1, the impacts of USF reform are likely to create a gap in Maine resources as follows:

- Lack of funding to operate and maintain the copper-based network that provides the majority of Maine's broadband and telephone service, due to the loss in High Cost funding to both the dominant and smaller carriers, can lead to a disruption in services and a reduction in service quality.
- Lack of funding to invest in broadband buildout, particularly at higher speeds (10 Mbps or 25 Mbps), leads to loss in economic, educational, social and healthcare-related gains from buildout.
- Carrier focus on higher return on investment, leaving gap in service to highest cost areas, also leads to opportunity loss. Extremely high cost areas (identified as 1 percent nationwide, a higher percentage in Maine) may be funded only under CAF II competitive bidding or the much smaller Remote Areas Fund.
- Lack of local contribution to the E-rate program limits eligibility for and amount of federal support available.
- Gap in ConnectED benefits to the 1 percent of students will result in limited ConnectED support for students learning in Maine island schools and libraries.
- Gap in broadband infrastructure connections within Maine schools and libraries due to limited support for E-rate Priority 2 services limits use of innovative digital learning tools.
- Gap in policy-based coordination and financing of broadband efforts slows development, costs more and creates opportunity loss in potential economic growth and other gains.

### **1.3 RECOMMENDATIONS**

The summary above and the analysis that follows in the body of the report provide the basis for the recommendations below, which the Authority and other State agencies can use in developing Maine strategy, policy and programs that align with and maximize future USF funding.

1. Identify and encourage pursuing untapped existing and new opportunities for USF funding, particularly pilot programs. Understand individual USF program opportunities and monitor program transformations and opportunities that meet needs of different stakeholder groups, including educational and healthcare providers. Act as a clearinghouse of information on USF and other complementary opportunities, encouraging aggressive and informed efforts to secure funding.

2. In collaboration with the Maine Public Utilities Commission (MPUC) and the Maine State Legislature, encourage the employment of Maine Universal Service Fund (MUSF) mechanisms to support a redefined concept of universal service as fiber optic buildout that replaces copper plant, rather than supporting voice provider of last resort (POLR) services,<sup>10</sup> which will be obsolete. Advocate for the expansion or redirection of MUSF support to fund open access fiber optic last mile, creating a broadband market with structural separation, that is, a market with retail service offerings separate from the network infrastructure.
3. Encourage State and regulatory support for new business arrangements (consolidations, partnerships, service bundling, diversification) for local rural carriers to target funding and develop products that meet USF-supported speeds. Encourage carriers to step into the gap—become broadband providers.
4. Raise the definition of unserved on an annual basis, particularly given that the FCC has proposed raising its broadband download speed definition to at least 10 Mbps (potentially 25 Mbps). Consider defining mobile as broadband. Continue to inventory speeds in Maine through current and complete mapping, including developing new more granular, address-level mapping.
5. Encourage coordinated broadband efforts to save costs, as well as individual, the latter of which can help address the gap in adoption. Help coordinate efforts of complementary public- and private-sector programs to share and maximize benefits.
6. As the USF program mandate continues to progress from ubiquitous telephone service to a focus on broadband services in general, advance the dialog on and contribute to creating definitions for those provider entities and their customers who will contribute to the new fund and those who will be qualified recipients of the benefits based on that new model.
7. Take the lead in developing Maine State policy for ubiquitous broadband, as outlined in State statute,<sup>11</sup> integrating the above recommendations and the recommendations of the Maine Broadband Strategic Plan.<sup>12</sup>

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<sup>10</sup> A POLR-designated carrier provides customers within its service area a flat rate service with voice-grade access to the public switched telephone network regardless of the remoteness of their location. <http://www.mainelegislature.org/legis/statutes/35-a/title35-Asec7201.html>.

<sup>11</sup> MRSA 35-A §9202-A. <http://www.mainelegislature.org/legis/statutes/35-a/title35-Asec9202-A.html>

<sup>12</sup> <http://www.maine.gov/connectme/grants/ntia/docs/ConnectMESTrategicPlanFinal.pdf>

## 2.0 The Universal Service Fund (USF)

The FCC USF contributes over \$8 billion annually to support universal and affordable access to telecommunications services throughout the US. Channeled through four major programs—High Cost, Low Income, Schools and Libraries, and Rural Health Care—the fund has provided Maine from \$40 to \$50 million per year during the past five years, contributing a major portion of the operating revenues of rural telecommunications providers in the state. Following the release of the National Broadband Plan in March 2010, the FCC has been in the process of modernizing these programs, shifting the focus of funding from providing basic, ubiquitous telephone services to that of improving broadband access.<sup>13</sup> The reforms have redirected and limited the various funds, establishing higher accountability and greater contribution, including significant investment, from carrier participants in the process. As the reforms are fully implemented in the next few years, they are expected to create both opportunities and challenges for Maine rural providers, State policy makers, schools and libraries, rural healthcare facilities, and Maine citizens who benefit from this support.

An overview of the USF, its four major programs and their current and anticipated transformations is provided in this section. The current and potential impacts of reform on Maine providers and consumers are reviewed and analyzed in Section 3.0. Recommendations on strategies to address these impacts are provided in Section 4.0.

### 2.1 INTRODUCTION

Universal service is the federal policy to provide a baseline level of telecommunications services to all consumers in the US, including those with low income and/or living in rural, insular or remote areas. First established by the

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<sup>13</sup> Reforms to the USF were initiated in 2010 with the Schools and Libraries Sixth Report and Order, which modernized universal funding under the Schools and Libraries Program. [http://www.universalservice.org/\\_res/documents/about/pdf/fcc-orders/2010-fcc-orders/FCC-10-175.pdf](http://www.universalservice.org/_res/documents/about/pdf/fcc-orders/2010-fcc-orders/FCC-10-175.pdf). A year later, the FCC released the USF/Intercarrier Compensation (ICC) Transformation Order and Further Notice of Proposed Rule Making (FNPRM), which reformed support under the High Cost Program and intercarrier compensation (ICC) systems. <http://www.fcc.gov/document/fcc-releases-connect-america-fund-order-reforms-usficc-broadband>; [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-11-161A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-161A1.pdf)

Communications Act of 1934 and expanded by the Telecommunications Act of 1996 to include schools, public libraries, and rural healthcare facilities, the policy is implemented through the Universal Service Fund (USF), which is collected from and distributed to eligible telecommunications carriers (ETCs).<sup>14</sup> In 1997, the FCC created an independent, not-for-profit organization to administer the fund—the Universal Service Administrator Company (USAC).<sup>15</sup> For each of the four USF programs, USAC files reports on the estimated support required (FCC demand filings), collects contributions from participating carriers, and disburses support payments.<sup>16</sup> To assess contributions, USAC uses an FCC-calculated “quarterly contribution factor,” derived from projected fund demand and projected carrier revenues for international and interstate communications services. Carriers also use the measure to determine the costs that they will charge their customers on monthly bills.<sup>17</sup> Through this process, the fund is financed not by carrier or federal revenues, but by the end users.

In the last five years, the total USF disbursement nationwide has risen from \$7.25 billion in 2009 to \$8.3 billion in 2013, with a high of \$8.7 billion in 2012 (Figure 2-1).<sup>18</sup> By far the largest disbursement of the fund is administered through the High Cost Program. Established originally to support universal availability of local telephone services, this program has disbursed an average of \$4.2 billion in annual funding to primarily rural local carriers during the last five years (2009-2013). The Schools and Libraries Program, which supports affordable telecommunications and internet access services in those institutions, is second in size, with an average annual disbursement of \$2.16 billion (with an inflation-based cap of \$2.41 billion for

<sup>14</sup> ETCs include long distance, local telephone, wireless telephone, paging and payphone providers that provide interstate and international services, and earn above certain revenue thresholds.

<sup>15</sup> USAC is a subsidiary of the National Exchange Carrier Association (NECA), a membership organization of US local telecommunications companies that administers regulatory and financial programs, including the FCC’s access charge program. The access charge program manages the distribution of interstate access revenues from fees that long distance companies pay to use local telephone company networks.

[https://www.neca.org/NECA\\_Home.aspx](https://www.neca.org/NECA_Home.aspx)

<sup>16</sup> <http://www.usac.org/default.aspx>

<sup>17</sup> The contribution factor at 16.4 percent for 1Q2014 has gradually risen from an annual average of 3 percent in 1998, growing at a greater rate than the USF because of the shrinking base of long-distance revenues. Reforms that limit USF support could lead to increased demand, which, in turn, could increase the USF contribution factor.

<http://www.fcc.gov/encyclopedia/contribution-factor-quarterly-filings-universal-service-fund-usf-management-support>

<sup>18</sup> Annual statistics on USF disbursements are published in USAC annual reports at: <http://www.usac.org/about/tools/publications/annual-reports/>. 2013 demand projections are calculated using FCC quarterly filings for 2013 (Appendices M-02) at: <http://www.usac.org/about/tools/fcc/filings/default.aspx>. 2013 disbursement statistics will be published in USAC’s 2013 annual report due the end of March 2014.

funding year 2014). The Low Income Program, which subsidizes residential service for low-income consumers, and the Rural Health Care Program, which subsidizes telecommunications and internet access services for rural healthcare providers and consortia, are smaller funds, with an average annual disbursement of \$1.62 billion and \$108.5 million, respectively (Figure 2-2).

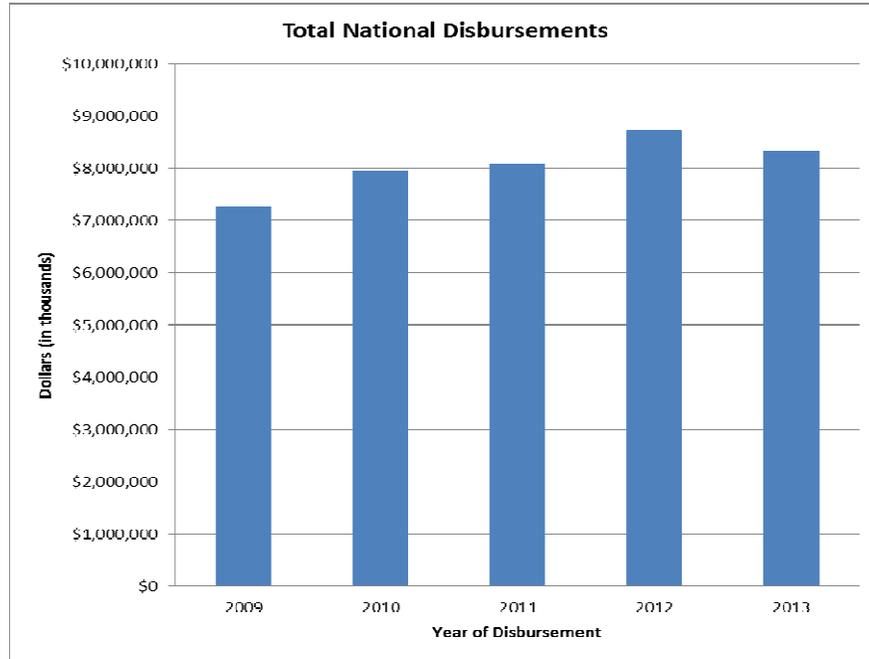


Figure 2-1: USF Total National Disbursements

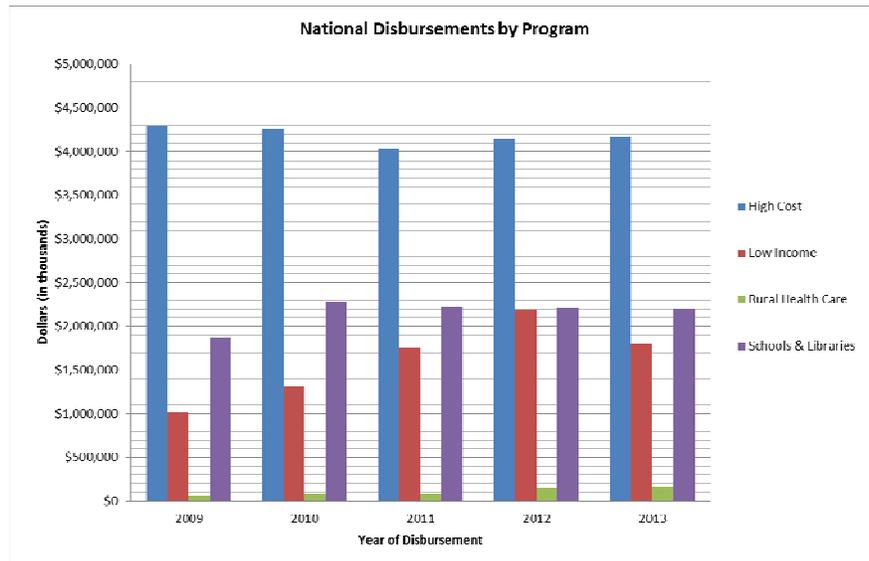


Figure 2-2: USF National Disbursements by Program

Maine’s portion of the total disbursement during the last five years has been an annual average of \$46 million, with the bulk of support distributed through the High Cost Program, at an annual average of \$27 million (Figures 2-3 and 2-4). The Schools and Libraries Program has yielded an average of \$8 million annually; the Low Income Program, \$9 million; and the Rural Health Care Program, \$1.2 million.<sup>19</sup>

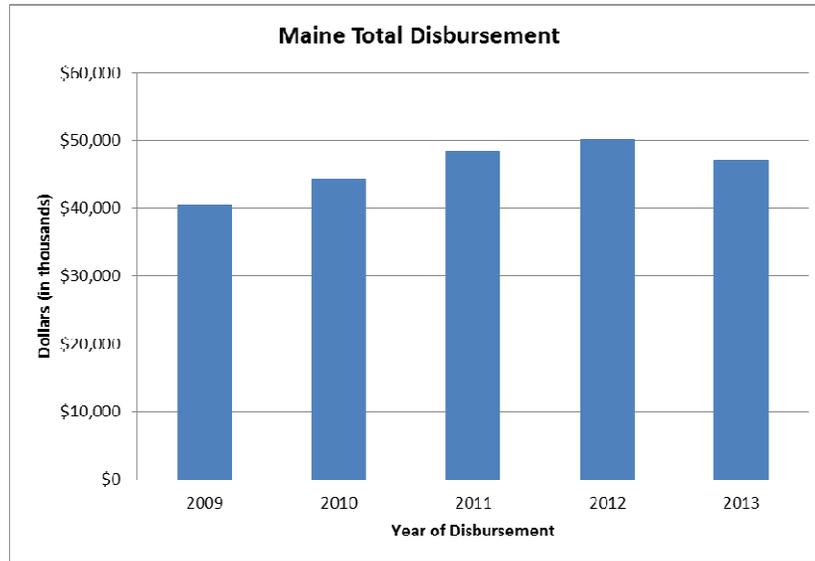


Figure 2-3: USF Maine Disbursement

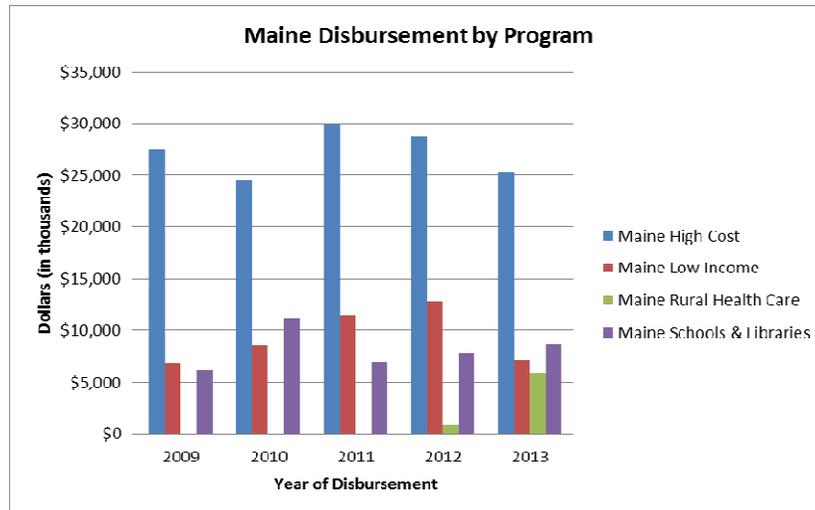


Figure 2-4: USF Maine Disbursement by Program

<sup>19</sup> The increase in Maine’s Rural Health Care Program funding in 2013 is due to an approved disbursement of \$5.8 million for developing the New England Telehealth Consortium rural healthcare facility broadband network under the Rural Health Care Pilot Program. The average funding under the parent program for the past five years, not including pilot projects, has been much less at \$47,000.

The FCC's effort since 2010 to modernize the four fund programs has been driven both by the marketplace—the changing demand for services (from voice telephony to broadband) and the general trend toward more competition (with less state protection for monopoly incumbents)—and by the widely acknowledged need for fund reform.<sup>20</sup> A review of each of the four programs, their original design, and the nature of the reforms follows. A timeline of USF reforms is shown in Figure 2-5.

## 2.2 HIGH COST PROGRAM

The High Cost Program was established to support affordable, basic local telephone services in remote and rural areas that are high cost to serve. The original intent was to ensure that rural customers paid rates for services comparable to those available in less costly urban areas. The most complex of the four fund mechanisms, the High Cost Program has distributed subsidies through rural<sup>21</sup> and non-rural local incumbent exchange carriers (ILECs)—either price cap or rate-of-return companies<sup>22</sup>—and competitive eligible carriers (CETCs) or competitive local exchange companies (CLECs) serving in ILEC areas (Figure 2-6). Rural ILECs, predominantly circuit-switched telephone companies, have been the target and major beneficiaries of the program, although funding to CETCs has risen in recent years, particularly to competitive wireless carriers as the market for mobile technologies has grown (e.g., US Cellular in Maine).<sup>23</sup>

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<sup>20</sup> Congress, the GAO, the FCC's Office of the Inspector General, and multiple independent studies, have all called for USF reform, citing the fund for lax oversight and the potential for waste, fraud, and abuse. FCC Office of Inspector General Semiannual Report, 31 October 2002. <http://transition.fcc.gov/oig/sar902.pdf>; Thomas Hazlett and Scott Walsten, *Unrepentant Policy Failure: Universal Service Subsidies in Voice & Broadband*, Arlington Economics, June 2013; <https://app.box.com/s/snp377aehtxicqy4q6ym>; Daniel Lyons, "Reforming the Universal Service Fund for the Digital Age," Boston College Law School Legal Studies Research Paper no. 304, September 2012; [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2321881](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2321881).

<sup>21</sup> According to the Telecommunications Act of 1934 (Section 153[37]), as amended (47 USC Section 153[37]), a carrier is considered rural if it provides service to any local exchange carrier area that does not include either any incorporated place of 10,000 inhabitants or more, based on US Census statistics, or any territory, incorporated or unincorporated, included in an urbanized area, based on the US Census as of August 10, 1993. For full definition, see: [http://www.house.gov/legcoun/Comps/FCC\\_CMD.PDF](http://www.house.gov/legcoun/Comps/FCC_CMD.PDF)

<sup>22</sup> USAC identifies a price cap carrier as a carrier limited in its ability to raise rates on the basis of an FCC-defined formula and not subject to rate base/rate-of-return regulation. A rate-of-return carrier is a carrier that is allowed to set rates on various products and services so that it earns no more than the FCC-authorized rate-of-return. Generally price cap carriers are companies with larger service areas in any given state (e.g., FairPoint in Maine) than those of rate-of-return carriers (e.g., Oxford Telephone, Pine Tree Telephone in Maine). <http://www.usac.org/hc/legacy/incumbent-carriers/step01/default.aspx>.

<sup>23</sup> The number of competitive carriers funded under the High Cost Program has risen steadily since 2009. <http://www.usac.org/about/tools/publications/annual-reports/>

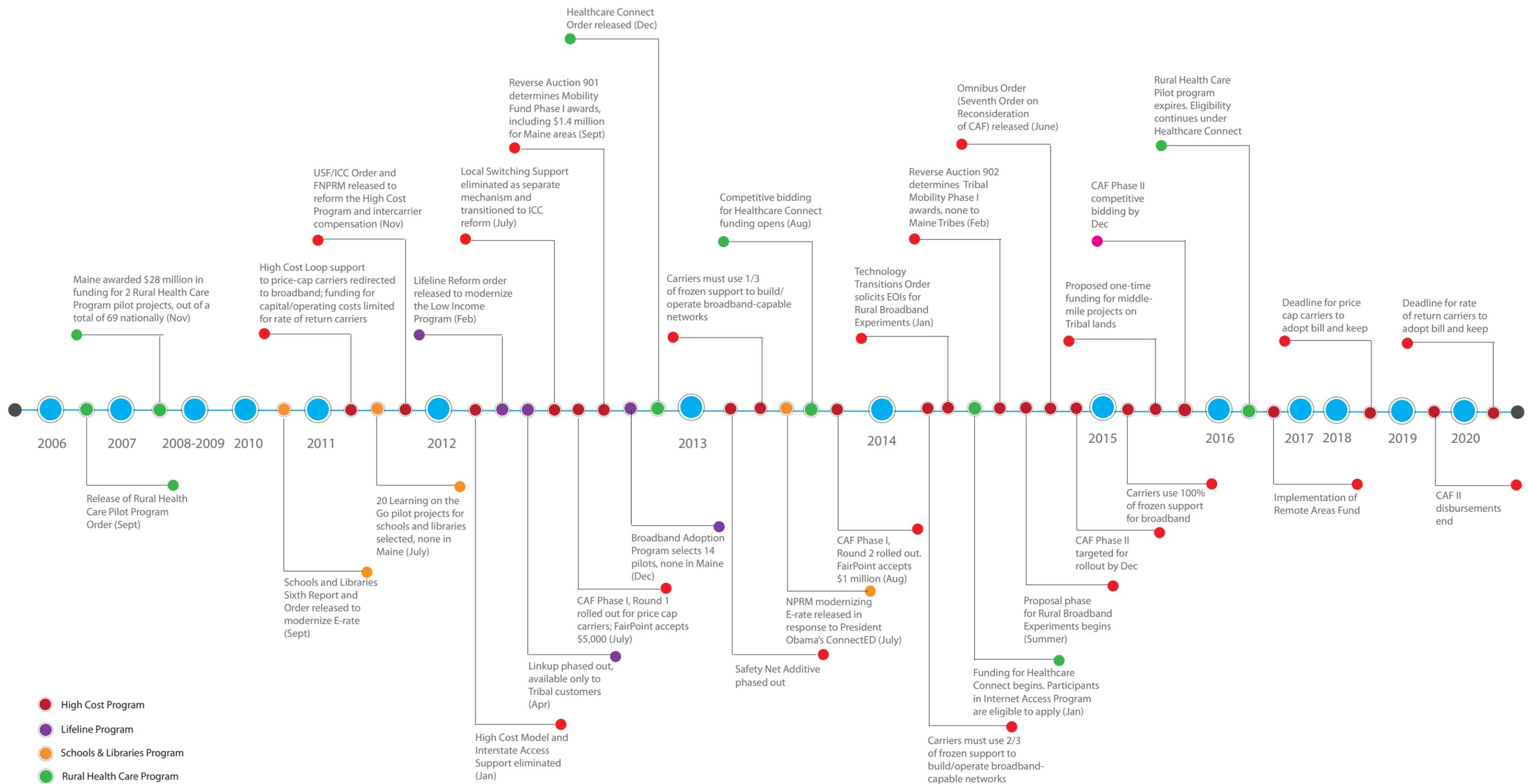


Figure 2-5: USF Reform Timeline

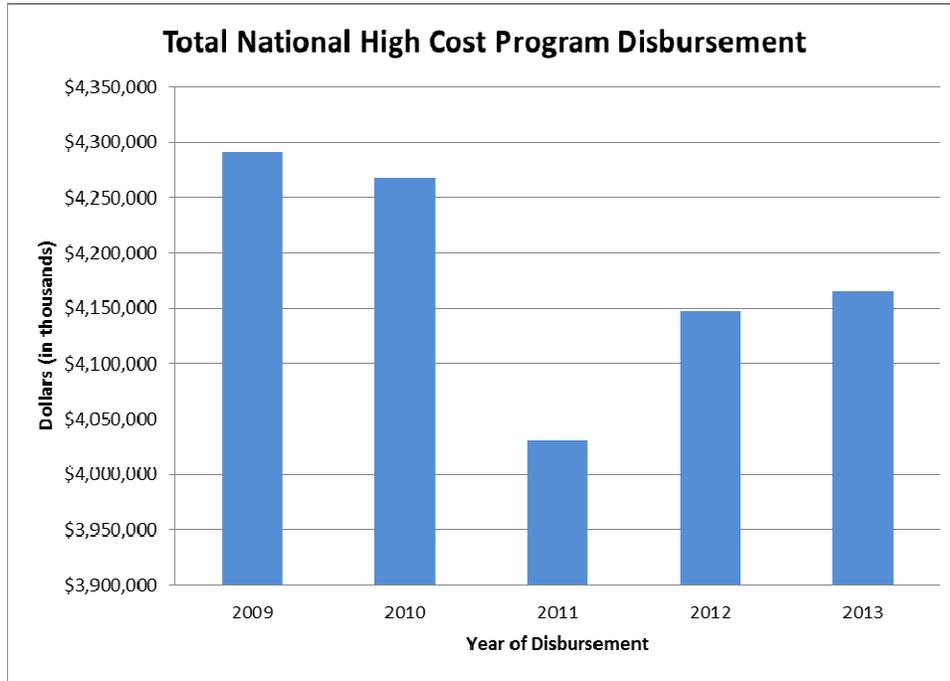


Figure 2-6: Total National High Cost Program Disbursement

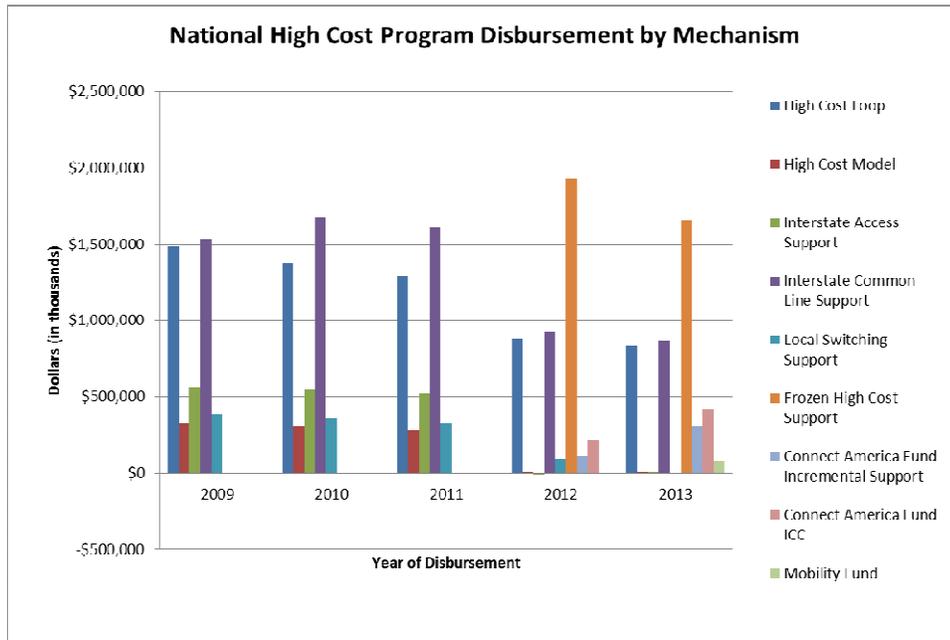


Figure 2-7: National High Cost Program Disbursement by Fund Mechanism

The program traditionally disbursed five funding supports to both ILECs and CETCs, including the High Cost Loop (HCL), High Cost Model (HCM), Interstate Access Support (IAS), Interstate Common Line Support (ICLS), and Local Switching Support

(LSS) (Figure 2-7). The objectives and eligibility requirements for each of these differed (Table 2-1), with the majority of disbursement made through the HCL and ICLS, each roughly a third of the total High Cost fund annually. As supplemental supports to the HCL, the Safety Valve Support (SVS) and the Safety Net Additive (SNA) have historically not been significant (less than 0.1% of the total). To qualify for the High Cost funding, disbursed on a calendar year basis, carriers have been required to submit count data, certain cost data, and certifications to USAC.

**Table 2-1: Reforms to Legacy High Cost Program Components**

| Type of Support                                                              | Objective                                                                                                                                                                                | Carrier Eligibility                                                         | Reforms                                                                                                                                      |
|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| High Cost Loop (HCL)                                                         | Provide support for "last mile" connection to rural carriers in service areas where the cost to provide this service exceeds 115% of the national average cost per line                  | Rural<br>Price cap and rate-of-return ILECs;<br>CLECs serving in same areas | Fund redirected to deployment of broadband for price cap carriers; fund for capital and operating costs limited for rate of return carriers. |
| <ul style="list-style-type: none"> <li>Safety Valve Support (SVS)</li> </ul> | Provide support above the HCL cap to rural carriers that acquire high cost exchanges and make substantial investments to enhance network infrastructure                                  | Rural<br>Price cap and rate-of-return ILECs;<br>CLECs serving in same areas | Fund redirected to deployment of broadband.                                                                                                  |
| <ul style="list-style-type: none"> <li>Safety Net Additive (SNA)</li> </ul>  | Provide support above the HCL cap to rural carriers that make significant investment in existing network infrastructure                                                                  | Rural<br>Price cap and rate-of-return ILECs;<br>CLECs serving in same areas | Fund phasing out as of 2013. <sup>24</sup>                                                                                                   |
| High Cost Model (HCM)                                                        | Maintain comparable costs for telephone service in all areas of state (urban and rural), determined by comparison of statewide average cost per line with national average cost per line | Non-rural<br>Mostly price cap ILECs; CLECS serving in same areas            | Fund eliminated in January 2012.                                                                                                             |
| Interstate Access Support (IAS)                                              | Offset interstate access charges for price cap carriers                                                                                                                                  | Mostly non-rural<br>Price-cap ILECs; CLECS serving in same areas            | Fund eliminated in January 2012.                                                                                                             |
| Interstate Common Line Support (ICLS)                                        | Offset interstate access charges, allowing rate-of-return carriers to recover the common line revenue requirement, and ensure subscriber line charges are affordable to customers        | Mostly rural<br>Rate-of-return ILECs; CLECS serving in same areas           | Fund for capital and operating costs limited.                                                                                                |
| Local Switching Support (LSS)                                                | Help carriers serving 50,000 lines or less recoup the high fixed switching costs of providing service to fewer customers                                                                 | Rural<br>Price cap and rate-of-return ILECs;<br>CLECs serving in same areas | Fund eliminated as separate support mechanism in July 2012. Transitioned to intercarrier compensation (ICC) reform.                          |

<sup>24</sup> As of the FCC’s 10 June 2014 Omnibus Order (Report and Order, Declaratory Ruling, Order, Memorandum Opinion and Order, Seventh Order on Reconsideration, and Further Notice of Proposed Rulemaking), qualified rate of return carriers can receive SNA support based on significant network investments made in 2010 and 2011.  
[http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0610/FCC-14-54A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0610/FCC-14-54A1.pdf)

The core of the FCC’s modernization of the High Cost Program, as outlined in the 2011 order, is to re-orient the focus of these subsidies from voice telephony to broadband services under the new Connect America Fund (CAF) and its extensions the Mobility Fund and the Remote Areas Fund. The modernization is also aimed at establishing greater transparency and accountability through stricter fund oversight<sup>25</sup> and greater cost efficiencies through competitive bidding mechanisms, such as reverse auctions.<sup>26</sup> In a six-to-eight-year transition, these three funds will ultimately replace the High Cost Program.

The High Cost Program has been labeled a form of corporate welfare insulating legacy telephone companies from competition.

Initially the FCC has frozen High Cost spending under all support mechanisms at the 2011 level—\$4.5 billion total, with \$1.8 billion at most for price-cap carriers and \$2 billion for rate-of-return carriers. The FCC also has imposed new carrier obligations to drive the transition of support to voice and broadband-capable networks. Price cap carriers that received frozen High Cost support in 2013 are required to use at least one-third of that support to build and operate such networks for use in serving areas unserved by an unsubsidized competitor.<sup>27</sup> This spend obligation increases in 2014 to two-thirds and in 2015 to 100 percent. Rate-of-return carriers receiving legacy universal service support are required to offer broadband service of at least 4 Mbps down and 1 Mbps up to customers upon their reasonable request.<sup>28</sup>

<sup>25</sup> The High Cost Program has been labeled a form of corporate welfare insulating legacy telephone companies from competition. High cost subsidies have been awarded to carriers that compete against unsubsidized competitors, to carriers that serve wealthy areas, and to multiple carriers serving the same area, all paid for by the consumer. Plus subsidies to rate-of-return carriers, which serve less than 5 percent of users, are calculated on the carrier’s embedded costs—the higher the costs, the more the carrier receives in subsidies, resulting in potential cost inflation. See, e.g. Lyons, “Reforming the Universal Service Fund,” [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2321881](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2321881).

<sup>26</sup> In a reverse auction, several sellers of goods and services compete to obtain business from the buyer, typically lowering prices to win. The reverse auction process awards one carrier per service area, rather than several carriers as in the legacy system.

<sup>27</sup> The United States Telecom Association, FairPoint Communications and the Alaska Communications Systems petitioned the FCC to waive the rules concerning how price cap carriers are obligated to use the High Cost frozen support in 2013. The FCC clarified in response that price cap carriers may use frozen support either to recover the costs of past network upgrades to extend broadband-capable networks, to maintain and operate existing networks in such areas, or a combination of the two.

<sup>28</sup> Rate-of-return carriers must certify that they are taking reasonable steps to offer broadband service in their service area, and that requests for broadband service are met within a reasonable amount of time. The recent Omnibus Order clarifies several criteria for carriers to use in assessing whether a request is unreasonable. [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0610/FCC-14-54A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0610/FCC-14-54A1.pdf)

Since 2011, HCL support for price-cap carriers has been redirected to the deployment of broadband networks and capped at \$250 per line for rate of return carriers. HCM and IAS funds were eliminated in 2012,<sup>29</sup> and expense limits extended on ICLS. LSS was eliminated as a separate support mechanism and is being addressed as part of intercarrier compensation (ICC) reform (Table 2-1).

### 2.2.1 Connect America Fund (CAF)

The primary focus of the CAF is to subsidize wireless and wireline broadband providers in unserved and underserved areas. A secondary objective is to modernize the process of universal service funding, transitioning carriers from a traditional cost-recovery model to the use of competitive bidding and a “forward-looking” cost model to estimate costs. Designed to roll out in two phases, the FCC launched Phase I in 2012 to provide an immediate one-time infusion of funds (\$300 million in additional, incremental support) to bring broadband to unserved areas. Phase II, originally planned to be under way in 2014, is to provide ongoing support to deploy and maintain broadband and voice service in high-cost areas at rates comparable to urban areas.

*CAF Phase I.* For CAF Phase I, the 2011 USF/ICC Transformation Order specified that incumbent price-cap carriers deploy broadband at least 4 Mbps down and 1 Mbps up and offer service that satisfies new public interest obligations to one unserved location for every \$775 in support (with latency suitable for real-time applications and services such as VOIP<sup>30</sup> and with monthly usage capacity comparable to fixed broadband offerings in urban areas). Rate-of-return carriers are not yet eligible for CAF funding.<sup>31</sup> During the first round of Phase I in 2012, carriers accepted only \$115 million of the \$300 million offered, primarily because target support levels were too low for the costs associated and expected return, at least in some unserved areas (see discussion on reform impacts in Maine in Section 3.1.1).<sup>32</sup>

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<sup>29</sup> Approved disbursements reported for HCM and LSS in 2013 (USAC Annual Report 2013) are due to prior period adjustments made in 2013.

<sup>30</sup> Voice over internet protocol (VOIP) is a methodology or group of technologies for delivering voice communications and multimedia sessions over internet protocol networks, such as the internet.

<sup>31</sup> As of the 10 June 2014 Omnibus Order, the FCC proposes to establish a Connect America Fund for rate of return carriers and seeks comments on a two-step transition for these carriers to Phase II model support. The Order also proposes to award \$10 million in one-time support to rate of return carriers for middle mile projects on Tribal lands. [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0423/DOC-326703A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0423/DOC-326703A1.pdf). In addition, rate of return carriers were invited to submit expressions of interest for the CAF Phase II experiments (see p. 2-12).

<sup>32</sup> Three carriers declined the entire amount of funding offered to them, including AT&T which declined \$47.9 million, and Verizon which declined \$19 million. Fairpoint Communications Inc. accepted \$2 million of the \$4.8 million offered. [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-12-639A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-12-639A1.pdf);

With \$185 million left over from Round 1, the FCC in 2013 allocated \$485 million of one-time, per-location payments among providers for Round 2 to upgrade their networks. As part of their obligation, providers were asked to match the payment with their own private investment, and to complete network upgrades in the next three years. Round 2 support included \$550 per home with low speed (less than 3 Mbps down and 768 kbps up) and \$775 per home with dialup only, which prioritized the unserved. Five price cap carriers in 41 states, including FairPoint Communications, elected to serve locations within their respective service areas for which the FCC authorized \$255.7 million in December.<sup>33</sup>

*CAF Phase II.* CAF Phase II, scheduled for rollout by the end of 2014 and for disbursement 2015-2019, focuses support for voice and broadband networks only in high-cost areas and not in areas where unsubsidized competitors are already providing services.<sup>34</sup> The funding process, unlike that of the legacy High Cost Program, requires carriers to adopt a profitability versus cost-recovery business model.

With \$1.8 billion budgeted annually for five years, the FCC will offer each price cap carrier monthly support for that five-year period in exchange for a state-level commitment to serve specified areas currently not served by an unsubsidized (or potentially subsidized) competitor.<sup>35</sup> Monthly support will be calculated using the Connect America Cost Model (CACM or CAM), which estimates the cost of providing voice (via carrier grade VOIP) and broadband-capable network connections to all locations in the country, providing specific details at the census block level.<sup>36</sup>

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<http://www.bennetlaw.com/2012/07/price-cap-carriers-accept-only-115-million-of-caf-phase-i-support/>

<sup>33</sup> See FCC map: <http://www.fcc.gov/maps/connect-america-fund-phase-i-round-two;>  
<http://www.fcc.gov/document/over-255-million-connect-america-funding-authorized-41-states>

<sup>34</sup> The 2011 order defines an unsubsidized competitor as a facilities-based provider of residential terrestrial fixed voice and broadband service that does not receive high cost support. As of the Omnibus Order, the FCC is proposing to exclude areas not served by both subsidized and unsubsidized competitors from the offer of CAF Phase II support.  
[http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0423/DOC-326703A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0423/DOC-326703A1.pdf)

<sup>35</sup> [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-13-2115A1.pdf;](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-13-2115A1.pdf)  
[http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0610/FCC-14-54A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0610/FCC-14-54A1.pdf)

<sup>36</sup> The FCC has proposed two potential funding thresholds for support of high cost locations per month: \$48 and \$52. These numbers are calculated using an average revenue per user (ARPU) generated for services and the average take rate of users over the five-year life span of Phase II. Potential extremely high cost thresholds are \$145 and \$155 per location are also set. For information on the CACM, now in its fourth version, and the methodology used to create it, see: [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2013/db1218/DOC-324783A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db1218/DOC-324783A1.pdf). As of the 23 April 2014 Report and Order, the FCC tentatively set the funding benchmark for support of high cost locations at \$52.50 per location, estimating the extremely high-cost threshold at \$207.81 per location. For the FCC-developed list of eligible

Carriers that accept the state-level commitment will be obligated to meet rigorous broadband service requirements, with interim buildout requirements in three years and final requirements in five years. Also, as of the 10 June 2014 Omnibus Order, the FCC is proposing to raise the minimum broadband performance obligations from 4 Mbps to 10 Mbps download speed.

If price cap carriers do not accept the model-based offer, the FCC will determine support through a competitive bidding process to be conducted by the end of 2015. Non-traditional providers, such as cable operators, satellite providers, and electric cooperatives will be eligible to participate, and, according to the Omnibus Order, entities not currently qualified as ETCs, provided they seek ETC designation within 30 days of award. Price cap carriers that deny model-based support will also be eligible to participate. Funding support awarded through the competitive process will be available over a 10-year period.<sup>37</sup>

*CAF Phase II Experiments.* In advance of the Phase II rollout, the FCC released the Technology Transitions Order (31 January 2014) to solicit non-binding expressions of interest from entities willing to deploy robust, scalable broadband networks, using either wireline or wireless technologies, to high cost areas, including tribal lands, using additional Connect America funding.<sup>38</sup> The expressions of interest (EOIs), submitted in early 2014, were open to a wide range of entities—state and regional authorities, municipalities and tribal governments, research and educational networks, cable operators, ILECs and CLECs, fixed and mobile wireless providers, wireless ISPs, utilities and others, and comprise the first phase of a two-phased process that will also include a formal proposal. The intent of these experiments is to test, on a limited scale, the use of an application-based competitive bidding process with objective selection criteria before finalizing decisions regarding the Phase II bidding mechanism. Although the FCC has released a list of census tracts in price cap areas, with potential support amounts, that are suitable for such experiments, the FCC welcomes expressions of interest for serving similar geographic areas where the incumbent provider is a rate-of-return carrier.<sup>39</sup>

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census blocks unserved by an subsidized competitor, as of 11 February 2014, see:

<http://transition.fcc.gov/bureaus/wcb/ExperimentEligibleLocationsPN020514.csv>

<sup>37</sup> [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0610/FCC-14-54A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0610/FCC-14-54A1.pdf)

<sup>38</sup> *Technology Transitions et al.*, GN Docket No. 13-5 et al., Report and Order, Order and Further Notice of Proposed Rulemaking, Proposal for Ongoing Data Initiative, FCC 14-5 (rel. Jan. 31, 2014) (Technology Transitions Order). <http://www.fcc.gov/document/fcc-oks-voluntary-experiments-testing-impact-technology-transitions-0>

<sup>39</sup> For the experiments, the FCC established one high cost funding threshold of \$50, averaging the two potential high cost funding thresholds for CAF Phase II support (\$48 and \$52). The extremely high cost threshold is set at \$183.53.

<http://www.fcc.gov/document/potential-high-cost-areas-next-generation-network-experiments>

### 2.2.2 Mobility Fund

In October 2010, the FCC proposed the creation of a new fund to support expanded wireless and mobile broadband access, using a portion of the legacy USF.<sup>40</sup> Further defined in the 2011 USF/ICC Transformation Order, the Mobility Fund has two phases: (1) to provide immediate one-time support for expanding broadband and voice service to unserved areas and (2) to expand and sustain mobile voice and broadband in communities in high cost areas. In an effort to allocate fund subsidies cost effectively, the FCC has required that eligible mobile providers serving identified areas participate in reverse auctions.

*Mobility Phase I.* With an initial infusion of \$300 million, the FCC targeted Phase I support to populated census blocks unserved by mobile broadband services at third generation (3G) speeds or better. The obligation of carriers receiving awards is to deploy 4G service within three years, or 3G within two years to accelerate migration to 4G. In addition, the FCC targeted \$50 million in one-time support to Tribal lands that have census blocks unserved by 3G.<sup>41</sup>

In September 2012, the entire \$300 million Phase I amount was awarded to mobile carriers identified through Reverse Auction 901, including \$1.4 million (to US Cellular) for three areas in Washington County, Maine.<sup>42</sup> Awards for Tribal Phase I, totaling \$49.8 million, were determined through Auction 902 during February 2014.<sup>43</sup>

*Mobility Phase II.* For Mobility Phase II, the FCC has dedicated up to \$500 million every year for the objective of providing ongoing support to deploy and maintain mobile broadband and voice service in high cost areas. In late 2012, the FCC initiated further inquiry to determine structure and operational details, distribution methodology, eligible geographic areas, providers, and public interest obligations for this much larger effort. The inquiry also includes studying the amount to allocate for services on Tribal lands.<sup>44</sup> As of the 10 June 2014 Omnibus Order, the FCC is exploring whether to retarget Phase II support to ensure the continued deployment and preservation of 4G Long Term Evolution (LTE)<sup>45</sup> mobile broadband service and

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<sup>40</sup> Some of these funds, the FCC reports, supported service in areas served by other mobile carriers and were voluntarily relinquished by Verizon Wireless and Sprint.

[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-10-182A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-182A1.pdf)

<sup>41</sup> Bid units for Tribal areas are based on percentage of population rather than road mileage.

<sup>42</sup> [http://wireless.fcc.gov/auctions/901/reports/901winning\\_bids\\_by\\_state\\_county.pdf](http://wireless.fcc.gov/auctions/901/reports/901winning_bids_by_state_county.pdf);

[http://wireless.fcc.gov/auctions/default.htm?job=auction\\_summary&id=901](http://wireless.fcc.gov/auctions/default.htm?job=auction_summary&id=901)

<sup>43</sup> [http://wireless.fcc.gov/auctions/default.htm?job=auction\\_summary&id=902](http://wireless.fcc.gov/auctions/default.htm?job=auction_summary&id=902)

<sup>44</sup> <http://www.fcc.gov/document/comments-sought-mobility-fund-phase-ii>;

[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-12-1853A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-12-1853A1.pdf)

<sup>45</sup> Long Term Evolution (LTE) is a standard for wireless communication of high-speed data for mobile phones and data terminals.

preserve mobile voice and broadband service in areas that would otherwise not have such service.<sup>46</sup>

### 2.2.3 Remote Areas Fund

As a subset of the CAF, the FCC is creating a Remote Areas Fund to address extremely high cost areas in both price-cap and rate of return regions that do not receive CAF Phase II support. Initially allocated a subsidy of \$100 million annually, the Remote Areas Fund is estimated to target less than 1 percent of the US population. The amount of funding available in this fund, which is much less than the other mechanisms under the Connect America Fund, will have import to Maine given that 98.8 percent of Maine's land area is defined as rural.

To determine eligibility, the FCC stated in the 2011 USF/ICC Transformation Order its intent to use a cost model to identify the small number of extremely high cost areas that should receive support, establishing an extremely high cost benchmark above which an area will be ineligible for support through CAF II but eligible through the Remote Areas Fund. As an interim measure, the FCC recommended identifying census blocks in price cap territories that the National Broadband Map identifies as having no wireline or terrestrial wireless broadband service available, subsidized or unsubsidized. As noted above, the FCC has released a list of census tracts in price cap areas, with potential support amounts.<sup>47</sup> In January 2013, the FCC sought further comment on the design of the fund,<sup>48</sup> and announced in a Report and Order in April 2014 that estimates an extremely high-cost threshold at \$207.81 per location.<sup>49</sup>

As of June 2014, the FCC concluded in the Omnibus Order that participants in the CAF Phase II competitive bidding process will be allowed to bid on any area where the estimated cost is at *or above* the high cost funding benchmark adopted for the offer of model-based support to price cap carriers. By this decision, bidders can include extremely high cost areas in their bids for high cost funds, enabling them to build out networks that span both types of areas. Full implementation of the Remote Areas Fund is deferred until 2016, after completion of the CAF Phase II competitive bidding.

### 2.2.4 Intercarrier Compensation (ICC) Transformation

The 2011 USF/ICC Transformation Order also outlines reforms to FCC rules on intercarrier compensation, which regulate the charges that one carrier pays another to originate, transport, and terminate telecommunications traffic. Reforms to the

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<sup>46</sup> [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0610/FCC-14-54A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0610/FCC-14-54A1.pdf)

<sup>47</sup> <http://transition.fcc.gov/bureaus/wcb/ExperimentEligibleLocationsPN020514.csv>

<sup>48</sup> [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-13-69A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-13-69A1.pdf)

<sup>49</sup> [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0422/DA-14-534A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0422/DA-14-534A1.pdf)

existing system, created after the 1984 breakup of the former AT&T monopoly, are designed initially to curtail costly arbitrage practices, such as access stimulation, in which traffic volumes are artificially inflated to increase intercarrier compensation, and phantom traffic, in which signaling information on calls, required for intercarrier billing, is missing or masked.<sup>50</sup> The FCC's ultimate goal is to implement a bill-and-keep framework to shift the billing relationship to the end user rather than between carriers, with the result that carriers cover network costs by charging their subscribers first before seeking universal support.

The first step in ICC reform has been to reduce terminating switched access rates and intercarrier compensation payments, capping all interstate and most intrastate rate elements. To mitigate the effect of reduced intercarrier revenues on carriers and encourage continued investment in broadband infrastructure, the FCC adopted a transitional access recovery mechanism. This mechanism enables carriers to recover lost ICC revenues through either the Connect America Fund ICC or by charging customers a limited fee—an access recovery charge (ARC)—based on a percentage of the reduction in revenue each year resulting from the ICC reform.

During the transition, carriers will make incremental cuts each year until they no longer bill each other for completing calls, realizing the bill-and-keep framework. The deadline for price cap carriers to adopt this framework is July 2018 and for rate of return carriers, July 2020.

### **2.3 LOW INCOME PROGRAM OR LIFELINE**

The Low Income Program, or Lifeline, was established in 1985 to help eligible low-income consumers, including Tribes, pay for telephone services. Consumers with income at or below the 135 percent of the federal poverty guidelines<sup>51</sup> or those who participate in qualifying state, federal or Tribal assistance programs (e.g., Medicaid, SSI, or Temporary Assistance to Needy Families) have been able to apply for discounts to monthly charges on wireline or wireless connections through ETCs, which are then reimbursed through the program. A subprogram, Linkup, provided discounts on initial connection charges.

Administered at the state level with support authorized on a calendar year basis, the Low Income Program originally targeted traditional incumbent telephone

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<sup>50</sup> <http://www.ustelecom.org/news/newsletters/broadband-connection-depth/depth-fcc-actions-intercarrier-compensation-arbitrage>; <http://www.usac.org/hc/caf/iccr/default.aspx>

<sup>51</sup> Released annually by the US Department of Health and Human Services: [http://www.lifelinesupport.org/\\_res/documents/li/pdf/handouts/Income\\_Requirements.pdf](http://www.lifelinesupport.org/_res/documents/li/pdf/handouts/Income_Requirements.pdf)

companies that provide local telephone service.<sup>52</sup> The size of the fund has grown significantly since its inception however, and, with the growing market for mobile devices, the majority of funding is now through wireless CETCs (Figures 2-8 and 2-9).<sup>53</sup>

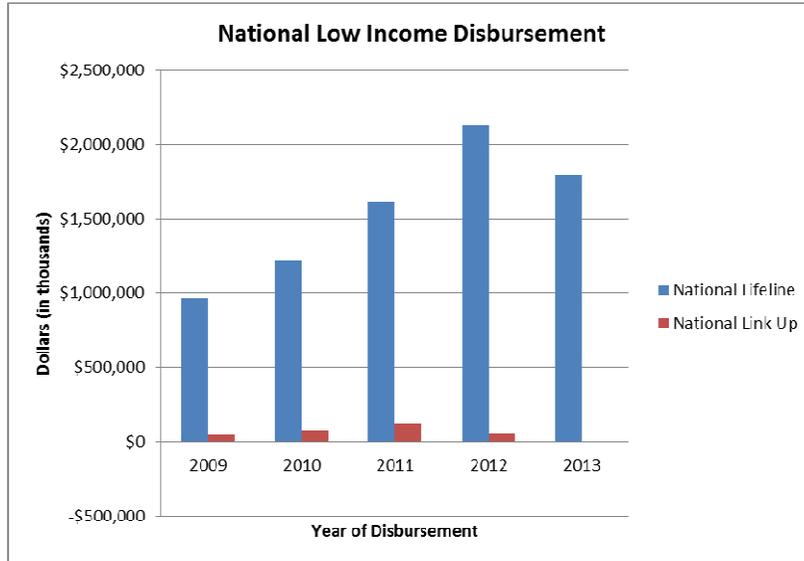


Figure 2-8: National Low Income Program Disbursement--Lifeline and Linkup

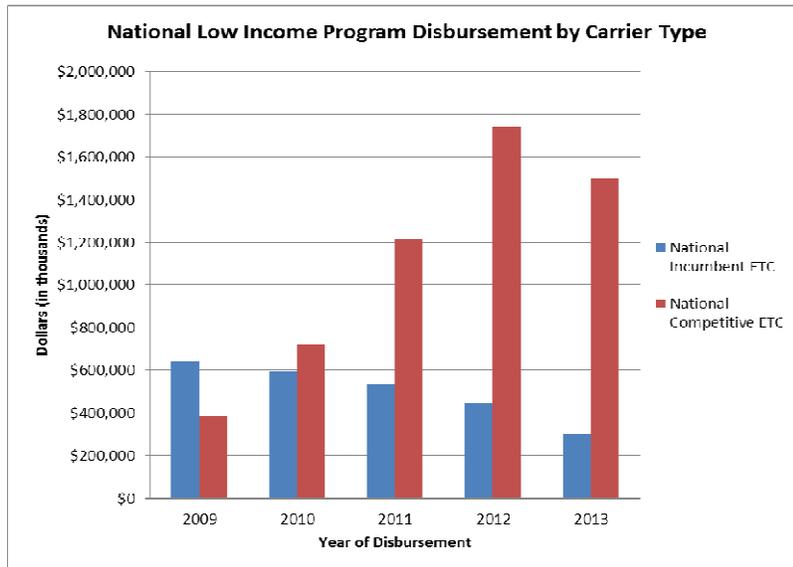


Figure 2-9: National Low Income ILEC and CLEC Distribution

<sup>52</sup> The Maine Public Utilities Commission administered this program for Maine providers and consumers until 2013.

<sup>53</sup> In Maine, TracFone, Nexus Communications, Virgin Mobile, Cintex and other wireless companies represent almost half of ETCs that receive and distribute Low Income support.

To reduce the size of the program, address inefficiencies and potential fraud, particularly from duplicate subscriptions,<sup>54</sup> and, as with other USF programs, redirect funds to broadband service, the FCC issued the Lifeline Reform Order (FCC 12-11) on 6 February 2012.<sup>55</sup> The order established discounts for internet connection as well as standalone telephone service for low income consumers, according to a one-per-household rule, tracked through the newly created National Lifeline Accountability Database (NLAD) and eligibility databases. In addition, Lifeline support was capped at \$9.25 per household per month, with additional support up to \$25 for consumers residing on Tribal lands. Other reforms included phasing out Linkup support for initial connection charges<sup>56</sup> and reducing Toll Limitation Service (TLS) subsidies to carriers for blocking or restricting long-distance service with a cap at \$3.00. As of April 2012, Linkup support has been available only to ETCs receiving High Cost Program support for Tribal customers.

With \$13.8 million in savings from these reforms, the FCC established the Broadband Adoption Pilot Program in 2012 to test how Lifeline discounts could best assist low-income consumers in accessing broadband networks.

### 2.3.1 Broadband Adoption Pilot Program

In December 2012, the FCC Wireline Competition Bureau<sup>57</sup> selected 14 pilot projects spanning 21 states and Puerto Rico to study the effects of various broadband subsidy amounts, end-user charges, data usage limits, choices for broadband speed, access to equipment and digital literacy, and other factors on low-income household broadband adoption.<sup>58</sup> Among the 9 selected projects offering wireline broadband service, 8 projects offered speeds at or above 4 Mbps download and 1 Mbps upload in all or portions of their study areas. All of the wireless broadband projects offered 3G- or 4G-based service. Although some of the wireless carriers receiving funds serve Maine consumers (TracFone, Virgin Mobile), none of the pilot projects is taking place in Maine. As yet, the FCC has not reported on the outcomes of these pilots nor indicated the direction a broadband-based Lifeline program might take.

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<sup>54</sup> Multiple carriers receiving support for the same subscriber or more than one subscriber receiving support per household are examples of duplicate subscriptions.

<sup>55</sup> <http://www.fcc.gov/document/fcc-reforms-modernizes-lifeline-program-low-income-americans-0%0A>

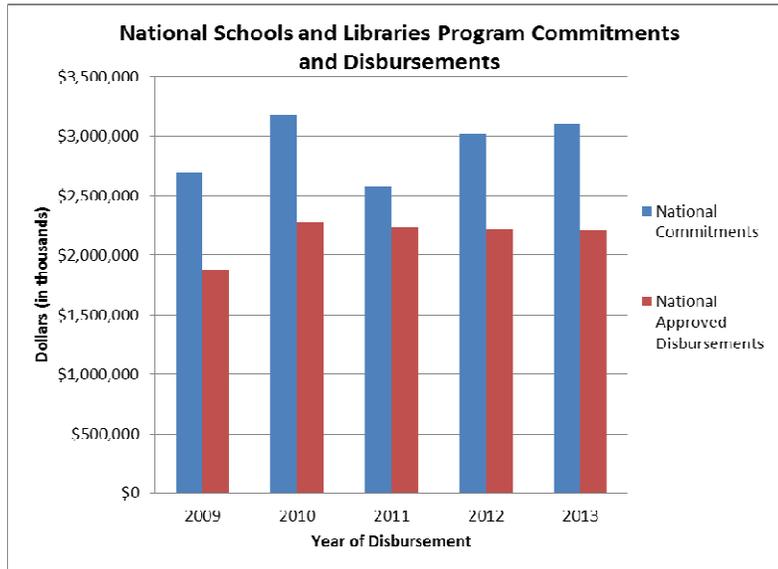
<sup>56</sup> Linkup will not be replaced given that competitive ETCs, wireless providers through which the majority of funding is disbursed, have not used the mechanism.

<sup>57</sup> The FCC's Wireline Competition Bureau develops policy concerning wireline telecommunications so as to promote growth and economical investments in wireline technology infrastructure, development, markets, and services.

<sup>58</sup> See Appendix A, of 19 December 2012 order at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DA-12-2045A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-12-2045A1.pdf); <http://www.fcc.gov/document/14-projects-chosen-lifeline-broadband-pilot-program-competition>

**2.4 SCHOOLS AND LIBRARIES PROGRAM OR E-RATE**

The Schools and Libraries Program, or E-rate, supports discounts to K-12 schools and libraries for telecommunications and internet access services. Working through service providers, the discounts range from 20 to 90 percent of costs, based on the level of poverty and the urban/rural status of the population served.<sup>59</sup> Eligible institutions, which include public and most nonprofit schools, and public and many private libraries, select providers through a competitive bidding process. Created in 1997, E-rate is the second largest USF program with an inflation-based cap of \$2.41 billion in dedicated support annually, based on a July to June funding year. Figure 2-10 shows funding commitments and approved disbursements by calendar year.



**Figure 2-10: National Schools and Libraries Program Commitments and Disbursements**

Participants receive discounts for five categories of services with two priority levels: Priority 1 includes telecommunications, telecommunications services, and internet access services; Priority 2 includes services for internal connections and basic maintenance of these connections. Schools or libraries, or “billed entities” with the highest level of reimbursement—90 percent—for Priority 1 services are funded first. E-rate support for Priority 2 services has declined in recent years due to increased demand for Priority 1 services, with no support provided to Priority 2 services in funding year 2014-2015. Recognizing the need for on-campus

<sup>59</sup> The customer receives a discount through one of two means: (1) the service provider invoices the customer discounted costs and is reimbursed by USAC, or (2) the service provider invoices the customer the full cost of services, USAC reimburses the provider, who then reimburses the customer.

connectivity to classrooms and libraries and to devices across these premises, the FCC is currently reconsidering the importance of supporting Priority 2 services under the new E-rate 2.0 program.

The FCC took initial steps to reform the E-rate program in 2010 with the Schools and Libraries Sixth Report and Order, which provided schools and libraries with greater flexibility to select the most cost-effective broadband services, streamlined the application process, and improved safeguards against fraud, waste and abuse.<sup>60</sup> The order also allowed schools and libraries to lease dark fiber from any entity and to open their facilities to community members when not in session, and established the 2011-2012 Learning-on-the-Go pilot program to study the pros and cons of wireless off-premises connectivity for mobile learning devices. With a dedicated \$9 million in funding, the pilot involved 20 schools and libraries in 14 states, none of which were in Maine or the rest of New England.

The FCC took further steps to modernize the program following President Obama's launch of ConnectED, a five-year educational technology program, in 2013. The goal of the program is to connect 99 percent of US students at broadband speeds no less than 100 Mbps, with a target of 1 Gbps per 1,000 students.<sup>61</sup> In response to Obama's call for action, the FCC issued on 19 July 2013 an NPRM Modernizing the E-rate Program, which shifts the focus of E-rate support from telecommunications and internet access to high-speed broadband connectivity.<sup>62</sup>

#### 2.4.1 E-rate 2.0 and ConnectED

The FCC's proposed E-rate modernization (E-rate 2.0) will change how schools and libraries apply for funding and prioritize investments in faster broadband connections. To meet the five-year ConnectED goal, the FCC plans to double the amount of money it disburses for high-speed internet connections over a two-year period (from \$1 billion to \$2 billion annually) not through additional new funding, but through pushing over E-rate monies allocated and approved, but not requested. In his 2014 State of the Union address, Obama announced pledges of an additional \$750 million in technology support from Verizon, Microsoft, Sprint, Apple, Autodesk, and O'Reilly Media, which will donate software, laptop and tablet devices, internet access services and training to schools.<sup>63</sup> Additional commitments from Prezi and

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<sup>60</sup> [http://www.universalservice.org/\\_res/documents/about/pdf/fcc-orders/2010-fcc-orders/FCC-10-175.pdf](http://www.universalservice.org/_res/documents/about/pdf/fcc-orders/2010-fcc-orders/FCC-10-175.pdf)

<sup>61</sup> [http://www.whitehouse.gov/sites/default/files/docs/connected\\_fact\\_sheet.pdf](http://www.whitehouse.gov/sites/default/files/docs/connected_fact_sheet.pdf); <http://www.whitehouse.gov/blog/2013/06/06/what-connected>;

<sup>62</sup> [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-13-100A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-13-100A1.pdf)

<sup>63</sup> [http://www.nytimes.com/2014/02/05/us/politics/obama-announces-pledges-of-750-million-for-student-technology.html?\\_r=0](http://www.nytimes.com/2014/02/05/us/politics/obama-announces-pledges-of-750-million-for-student-technology.html?_r=0)

Adobe now bring the figure to over \$1 billion in donated products and services, which the companies will individually administer.

The FCC modernization effort is based on three major objectives to (1) ensure schools and libraries have affordable access to 21<sup>st</sup> century broadband that supports digital learning, (2) maximize the cost-effectiveness of E-rate funds, and (3) streamline the administration of these funds. In a recent public notice (6 March 2014), the FCC sought comment on structuring the program to increase focus on connectivity inside classroom and library walls, establishing a potential one-time deployment to target additional funding to schools and libraries not connected to high-speed broadband, phasing out or reducing support for legacy voice services, and on developing potential demonstration projects.<sup>64</sup>

## 2.5 RURAL HEALTH CARE PROGRAM

The Rural Health Care Program supports discounts to public and not-for-profit health care providers in rural communities for telecommunications and broadband services. The goals of the program are to improve the quality of rural healthcare through the use of these technologies and to ensure that rural providers pay no more for services than providers in urban areas.

The program, which currently comprises four subprograms—the Telecommunications Program, the Internet Access Program, the Rural Health Care Pilot Program, and the newly formed Healthcare Connect Fund—is in the process of transitioning to two—the Telecommunications Program and the Healthcare Connect Fund. The smallest of the USF programs and traditionally underutilized, the Rural Health Care Program is capped at \$400 million in funding annually. Funding is based on a July-June fiscal year.<sup>65</sup> Figure 2-11 shows national funding commitments and approved disbursements by calendar year.

In addition to public or not-for-profit status, participating healthcare providers must be a certain type of entity (e.g., rural health clinic, not-for-profit hospital, community mental health center, local health department/agency, post-secondary educational institution offering healthcare education) or a consortium of providers consisting of one or more of eligible entities, located in an FCC-approved rural location<sup>66</sup> and seeking eligible telecommunications or internet access services.<sup>67</sup>

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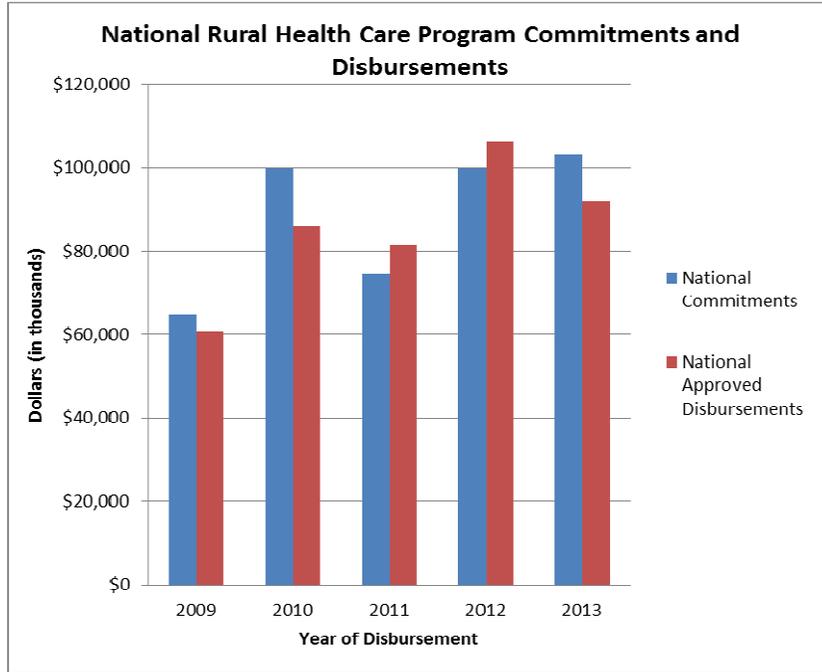
<sup>64</sup> <http://www.fcc.gov/document/focused-comment-sought-e-rate-modernization>

<sup>65</sup> <http://www.fcc.gov/encyclopedia/rural-health-care>;  
[http://www.universalservice.org/\\_res/documents/rhc/pdf/fcc/FCC-HCF-FAQs.pdf](http://www.universalservice.org/_res/documents/rhc/pdf/fcc/FCC-HCF-FAQs.pdf)

<sup>66</sup> USAC provides an online eligible rural area search tool based on census tract:  
<http://www.usac.org/rhc/telecommunications/tools/Rural/search/search.asp>

<sup>67</sup> <http://www.usac.org/rhc/telecommunications/health-care-providers/step01/eligible-services.aspx>

Eligible providers, which can pursue one-time, multi-year, and evergreen contracts, conduct online competitive bidding to obtain the most cost-effective services.



**Figure 2-11: National Rural Health Care Program Commitments and Disbursements**

As with the other USF programs, the FCC is restructuring the Rural Health Care Program to direct support to broadband connectivity. In the process, the Internet Access and Rural Health Care Pilot Programs are transitioning into the new Healthcare Connect Fund, which will fund high-capacity broadband services for rural healthcare providers and encourage the formation of state and regional healthcare networks. A review of these programs and their transformations follows.

**2.5.1 Telecommunications and Internet Access Programs**

The FCC created the Telecommunications Program in 1997 in response to the Telecommunications Act of 1996, which mandated that telecommunications carriers provide services for healthcare purposes to rural and non-profit healthcare providers at rates comparable to those in urban areas. Through the program, eligible healthcare providers have received a discount in the amount of the “rural-urban differential.” The FCC subsequently created the Internet Access Program in 2003, funding a 25 percent discount for rural healthcare providers on monthly internet access charges. These two programs together have comprised what has been known as the Primary Program.

With the release of the 12 December 2012 Healthcare Connect Order,<sup>68</sup> the FCC created the Healthcare Connect Fund and announced the phase-out of the Internet Access Program, with support ending 30 June 2014. Beginning in January 2014, recipients of internet access services discounts have been able to apply for support through Healthcare Connect. Funding for telecommunications will continue unchanged through the Telecommunications Program.

### 2.5.2 Rural Health Care Pilot Program

With the release of the 2006 Rural Health Care Pilot Program Order,<sup>69</sup> the FCC created the Rural Health Care Pilot Program to support the development of statewide or regional broadband healthcare networks, which would bring telehealth and telemedicine services to needy areas of the country. Out of 81 applicants to the program, the FCC selected 69 covering 42 states and 3 US territories to participate, including two in Maine—the Rural Western and Central Maine Broadband Initiative, which includes 7 sites spanning 4 Maine counties, and the New England Telehealth Consortium (NETC), which includes 305 sites over a three-state area (Maine, New Hampshire, and Vermont), with 111 sites in Maine (see Section 3.2.4). Total funding for the pilot program was set at \$417 million over three years (\$139 million per year) to pay for 85 percent of eligible costs of building the broadband networks, including implementing the information services provided over the networks and connecting to national backbone providers (Internet2 or National LambdaRail). Through the program, consortia have had the flexibility to purchase services and to build their own broadband infrastructure. The program does not cover administrative costs.

Currently 50 pilot projects, many of them statewide or regional networks, are active in 38 states. Although no additional pilot program support is available, some of the consortia, such as NETC, continue to accept new healthcare provider sites. Pilot program consortia are also able to apply for additional support under the Healthcare Connect Fund and to transition to this fund once pilot support is exhausted.

### 2.5.3 Healthcare Connect Fund (HCF) Program

The Rural Health Care Program modernization effort culminated in the formation of the Healthcare Connect Fund in December 2012.<sup>70</sup> Building on the findings of the pilot program, the new fund will expand healthcare provider access to high-capacity broadband services particularly in rural areas and support the creation of state and regional healthcare networks.

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<sup>68</sup> [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-12-150A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-12-150A1.pdf)

<sup>69</sup> [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-06-144A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-144A1.pdf)

<sup>70</sup> <http://www.fcc.gov/document/fcc-releases-healthcare-connect-order>

The fund provides a 65 percent discount on eligible expenses related to broadband for public and not-for-profit individual healthcare providers and consortia, including non-rural providers if more than 50 percent of a consortium has rural sites.<sup>71</sup> To maintain focus on smaller healthcare providers serving rural populations, support for non-rural hospitals with over 400 beds is capped at \$30,000 per year for recurring charges and \$70,000 over a five-year period for nonrecurring charges. Eligible expenses include broadband services, network equipment and, for consortia, healthcare provider-constructed and -owned network facilities. The fund does not pay for administrative costs.

Individual healthcare providers and consortia, which conduct competitive bidding for services, can apply for multi-year funding (up to three years) using evergreen contracts, which eliminate the need to reapply annually, and establish master services agreements (MSAs) with selected vendors. Competitive bidding for Healthcare Connect funding opened in August 2013 with funding beginning in January 2014. Unless USAC has established a filing window, funding requests are processed on a first-come, first-served basis.

In Maine, the Department of Health and Human Services (DHHS) has applied for Healthcare Connect funding to implement a regional healthcare network that will serve over 50 locations in Maine (Section 3.1.4).

#### 2.5.4 **Skilled Nursing Facilities Pilot**

The 2012 Healthcare Connect Order also established a Skilled Nursing Facilities Pilot Program to test the technical and economic feasibility of including in the Healthcare Connect program broadband connectivity for skilled nursing facilities, which are currently not eligible. With \$50 million available over a three-year period, the pilot program was originally scheduled to launch in 2014. The launch was deferred in February 2014, however, pending the outcome of the Technology Transitions Order call for broadband experiment EOIs, which are open to rural healthcare projects.<sup>72</sup> The FCC is considering diverting some portion of Skilled Nursing Facilities Pilot Program funds to rural healthcare broadband experiments.

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<sup>71</sup> The FCC has placed a \$150 million cap on commitments for consortium upfront charges and multi-year funding annually. Upfront payments are expenses related to healthcare provider-owned infrastructure, carrier infrastructure upgrades, pre-paid leases, and indefeasible rights of use (IRUs).

<sup>72</sup> [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0219/DA-14-223A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0219/DA-14-223A1.pdf)

## 3.0 USF Funding in Maine

Incumbent local and competitive carriers in Maine and their customers receive significant support from the four USF programs and their subprograms every year, with a total annual average of \$46 million during the last five years. As summarized in Section 2.0, the modernization of these programs is changing both the direction and amount of funding that stakeholders in Maine and other states will be eligible to receive in the future. Anticipating the impact of these reforms, as they are fully implemented in the next few years, will be key to Maine's addressing the challenges and pursuing the new opportunities they bring.

This section reviews Maine's status as an USF recipient and its differentiation among New England states, evaluates the impact of reforms on Maine's annual support, and assesses the strength of Maine's positioning for future funding, identifying potential gaps in Maine's funding resources going forward.

### 3.1 MAINE PROFILE

The majority of Maine's \$46 million in USF support yearly is distributed through the High Cost Program, at an annual average of \$27 million. The Schools and Libraries Program provides the state with an average of \$8 million annually; the Low Income Program, \$9 million; and the Rural Health Care Program, \$1.4 million, the latter amount of which increased substantially in 2012-2013 due to two broadband network projects funded under the Rural Health Care Pilot Program (Figure 2-4).<sup>73</sup> Maine's eligibility for and access to funding under these programs and their specific mechanisms are summarized below, providing a basis for comparison with other New England states and for evaluating the impacts of program reform.

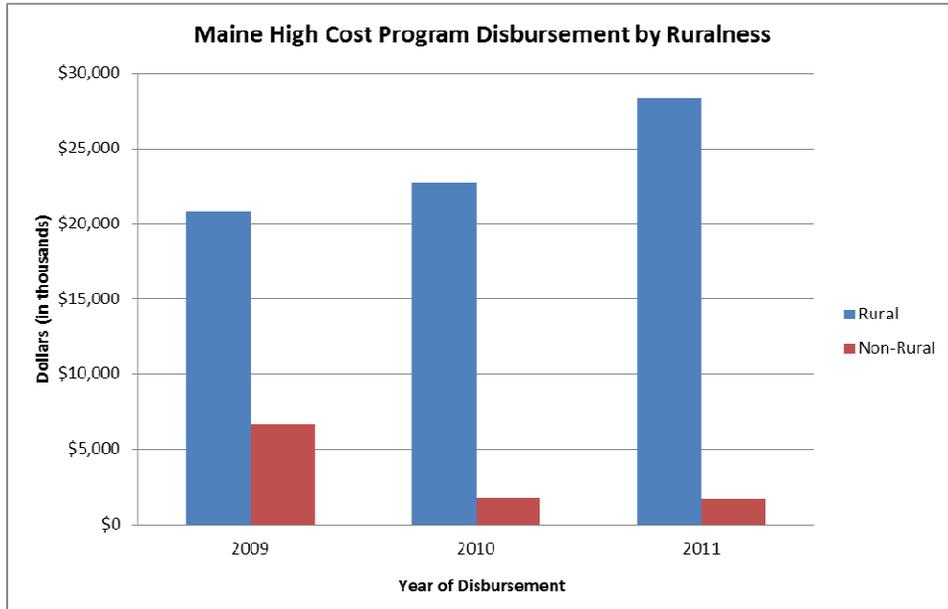
#### 3.1.1 High Cost Program Funding in Maine

With 98.8 percent of land area designated rural and 61 percent of its population rural,<sup>74</sup> Maine's eligibility for High Cost funding support for rural and remote areas is high. In 2011, for example, 95 percent of High Cost funding in Maine was disbursed to rural versus urban areas, significantly higher than the national average of 79 percent (Figures 3-1 and 3-2).

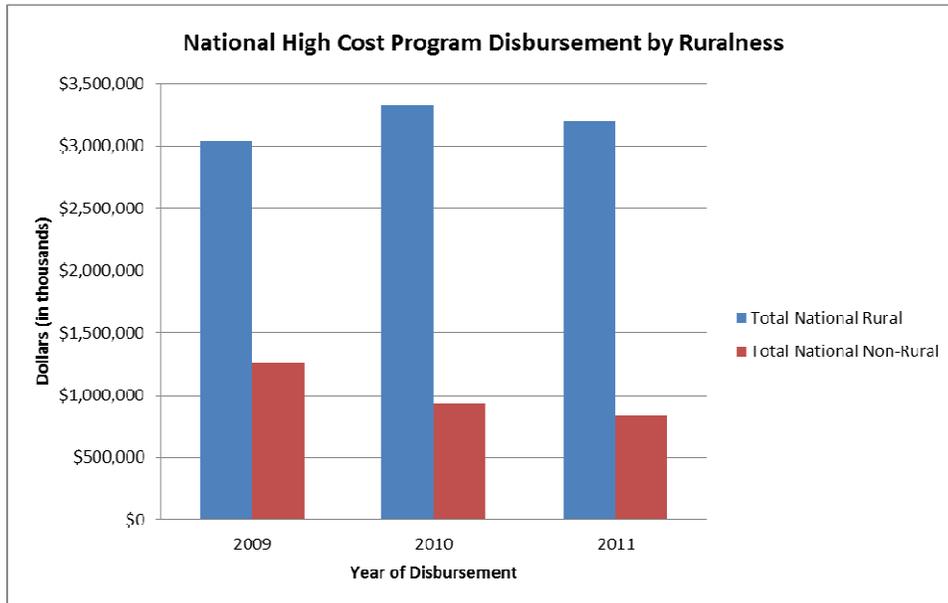
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<sup>73</sup> Averages are for years 2009-2013.

<sup>74</sup> 2010 US Census. <http://quickfacts.census.gov/qfd/states/23000.html>



**Figure 3-1: Maine High Cost Program Disbursement by Ruralness**



**Figure 3-2: National High Cost Program Disbursement by Ruralness**

These funds have primarily supported the operations of copper-wire-based networks in the state, in the last five years distributed through 20 local incumbents (ILECs) that serve Maine customers. The incumbents comprise smaller rural wireline rate of return companies and FairPoint Communications, a wireline price cap carrier with 5 local exchange companies, serving over 83 percent of customers

in the state. The single competitive carrier (CETC) to receive funding under this program is the wireless provider US Cellular, a subsidiary of TDS (Table 3-1).

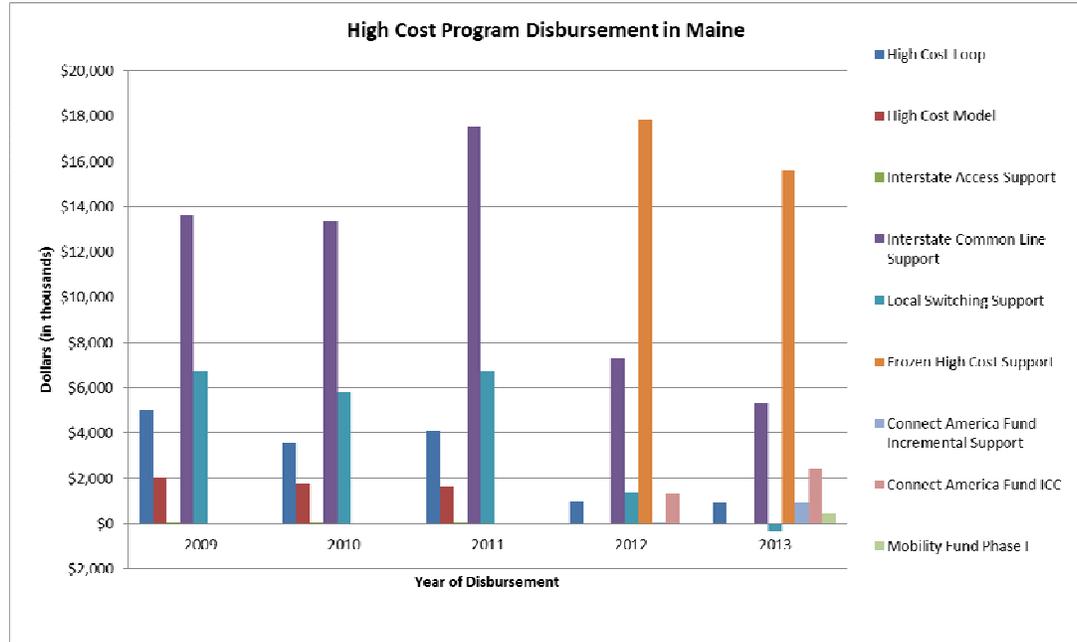
**Table 3-1: Broadband Delivery Networks in Maine by ETCs Receiving High Cost Funds**

| Carrier Name                     | Broadband Service                                         |
|----------------------------------|-----------------------------------------------------------|
| China Telephone*                 | • ADSL over copper                                        |
| Community Service*               | • ADSL over copper                                        |
| Standish Telephone*              | • ADSL over copper                                        |
| Northland Telephone*             | • ADSL over copper                                        |
| Northern New England Telephone*  | • ADSL over copper                                        |
| Cobbosseecontee Telephone**      | • ADSL over copper                                        |
| Island Telephone**               | • ADSL over copper                                        |
| Hampden Telephone**              | • ADSL over copper<br>• Fiber optic                       |
| Hartland & St. Albans**          | • ADSL over copper                                        |
| Lincolnton Telephone             | • ADSL over copper<br>• SDSL over copper<br>• Fiber optic |
| Oxford County Telephone          | • ADSL over copper                                        |
| Oxford West Telephone            | • ADSL over copper                                        |
| Pine Tree Telephone & Telephone  | • ADSL over copper                                        |
| Saco River Telephone & Telephone | • ADSL over copper                                        |
| Somerset Telephone**             | • ADSL over copper                                        |
| Union River Telephone            | • ADSL over copper<br>• Fiber optic                       |
| Unity Telephone                  | • ADSL over copper                                        |
| Warren Telephone**               | • ADSL over copper                                        |
| West Penobscot Telephone**       | • ADSL over copper                                        |
| Mid Maine Telecommunications     | • ADSL over copper                                        |
| US Cellular**                    | • Mobile wireless                                         |

\* FairPoint Communications    \*\*Telephone and Data Systems (TDS)

Before the issuance of the 2011 High Cost reform order redirecting funds to broadband access, rural rate of return ILECs received the majority of High Cost funding, with a high of \$17.5 million in 2011 through the Interstate Common Line

Support (ICLS) mechanism, which offsets interstate access charges to ensure telephone subscriber line charges are affordable (Figure 3-2).<sup>75</sup>



**Figure 3-3: High Cost Program Disbursement in Maine by Mechanism**

Rate of return and price cap carriers benefited from Local Switching Support (LSS), at a high of \$6.7 million in both 2009 and 2011; this fund has helped carriers recoup the high fixed switching costs of providing service to fewer customers in rural areas. The High Cost Loop (HCL) mechanism, which supports last mile connection to rural carriers, provided up to \$5 million in funding annually during the last five years to both price cap and rate of return companies. Both FairPoint and US Cellular received together in 2009 a total high of \$2 million in High Cost Model (HCM) support, which helps carriers maintain comparable costs for telephone service in all state areas—rural or urban.

Reforms to the High Cost Program and its mechanisms, introduced to redirect support from telephony to broadband, are reducing, replacing and in some cases eliminating the specific mechanisms through which Maine wireline and wireless carriers have traditionally received funding. As Figure 3-3 shows, support from HCL and ICLS funding has decreased significantly in the last two years; HCM, IAS, and LSS supports have been eliminated.

<sup>75</sup> FairPoint local exchange companies China Telephone Company and Standish Telephone Company also received ICLS funds in 2011.

To offset lost revenues, the FCC instituted the Frozen High Cost Fund and Connect America Fund Intercarrier Compensation (ICC) as temporary mechanisms for funding support. In 2012, Maine carriers received \$17.8 million in Frozen High Cost support and \$15.6 million in 2013. The Connect America Fund ICC yielded \$1.3 million in 2012 and \$2.4 million in 2013.

The losses and gains in funding due to High Cost reforms can be viewed in more detail through a comparison of 1Q2011 with 1Q2014 monthly disbursements to Maine carriers. Table 3-2 shows monthly and quarterly projected disbursements of funds to carriers in 1Q2011, before reforms were implemented in 2012. Table 3-3 shows monthly and quarterly projected disbursements in 1Q2014. Table 3-4 summarizes this information by carrier type.

As of 1Q2014, FairPoint Communications, Maine's price cap carrier, and its local exchanges have lost funding through all the High Cost legacy mechanisms from which it traditionally received funding, for a total of \$577,425 each month. The Frozen High Cost Fund, at least temporarily, provides an offset of \$653,209, an additional \$75,784 monthly. Accepting this support obligated FairPoint to spend one-third of the 2013 support to build and operate broadband-capable networks in areas unserved by an unsubsidized competitor.<sup>76</sup> This spend obligation has increased in 2014 to two-thirds and will increase in 2015 to 100 percent.

Both rate of return carriers and US Cellular, the competitive wireless carrier to receive High Cost Program funding, have lost revenue each month without a full offset. Rate of return carriers continue to receive HCL and ICLS funding at smaller monthly amounts, but no funding under SNA or LSS. Together with Connect America Fund ICC, rate of return carriers receive \$760,822 per month, \$131,811 less than in 2011.

It is important to note that the FCC has not provided rate of return carriers with funding options for broadband-specific investment; however, the 10 June 2014 Omnibus order proposes establishing a standalone Connect America Fund for these carriers, transitioning them in a two-step process to model-based support. The Order seeks guidance on the specifics of implementing this mechanism.<sup>77</sup>

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<sup>76</sup> FairPoint filed a petition with the FCC in February 2013 for a partial waiver of the spending obligations on broadband and received a clarification of the rule allowing the company to use the funding for maintaining its copper-based networks.

<sup>77</sup> [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0610/FCC-14-54A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0610/FCC-14-54A1.pdf)





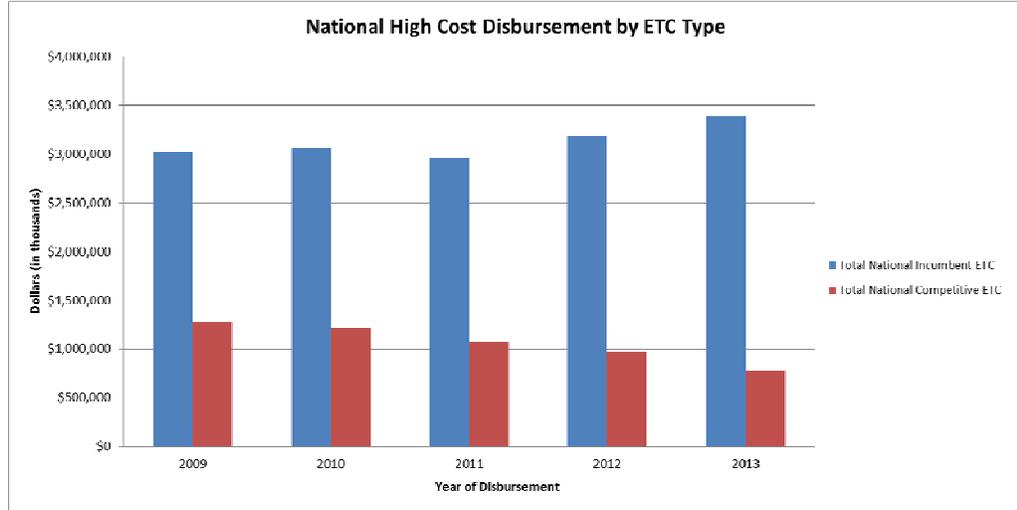
**Table 3-4: Summary of High Cost Disbursements to Maine Carriers by Month (1Q2011 and 1Q2014)**

| Carrier                  | Fund Mechanism           | Previous Disbursement* | Current Disbursement** | Monthly Loss or Gain |
|--------------------------|--------------------------|------------------------|------------------------|----------------------|
| <b>Price cap carrier</b> | HCM                      | \$94,923               |                        |                      |
|                          | HCL                      | \$79,017               |                        |                      |
|                          | SNA                      | \$18,229               |                        |                      |
|                          | IAS                      | \$1,746                |                        |                      |
|                          | LSS                      | \$84,102               |                        |                      |
|                          | ICLS                     | \$299,408              |                        |                      |
|                          | Frozen High Cost         |                        | \$653,209              |                      |
|                          | <b>Total</b>             |                        | <b>\$577,425</b>       | <b>\$653,209</b>     |
| <b>Rate of return</b>    | HCL                      | \$69,678               | \$79,940               |                      |
|                          | SNA                      | \$12,205               |                        |                      |
|                          | LSS                      | \$301,593              |                        |                      |
|                          | ICLS                     | \$509,157              | \$496,480              |                      |
|                          | Connect America Fund ICC |                        | \$184,402              |                      |
|                          | <b>Total</b>             | <b>\$892,633</b>       | <b>\$760,822</b>       | <b>(\$131,811)</b>   |
| <b>Competitive</b>       | HCM                      | \$45,274               |                        |                      |
|                          | HCL                      | \$77,992               |                        |                      |
|                          | SNA                      | \$19,795               |                        |                      |
|                          | IAS                      | \$636                  |                        |                      |
|                          | LSS                      | \$213,230              |                        |                      |
|                          | ICLS                     | \$507,099              |                        |                      |
|                          | Frozen High Cost         |                        | \$555,068              |                      |
|                          | <b>Total</b>             | <b>\$864,026</b>       | <b>\$555,068</b>       | <b>(\$308,958)</b>   |

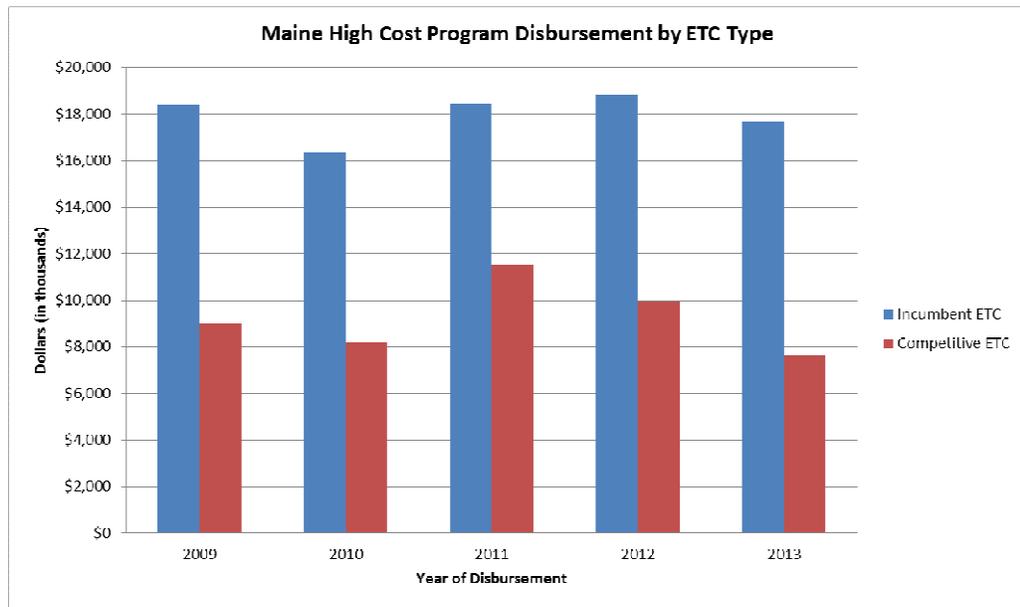
\*1Q2011 \*\*1Q2014

HCM = High Cost Model      SNA = Safety Net Additive      LSS = Local Switching Support  
 HCL = High Cost Loop      IAS = Interstate Access Support      ICLS = Interstate Common Line

US Cellular has experienced the greatest monthly loss in funding at \$308,958, primarily due to the loss of all funding under former legacy mechanisms totaling \$864,026 per month. The \$555,068 the carrier receives from the Frozen High Cost Fund does not make up the difference. It is noteworthy that although more High Cost funding dollars have been distributed to incumbent price cap and rate of return wireline carriers than to US Cellular, the competitive wireless carrier, the percentage of disbursement dollars to the competitive carrier under this program is higher in Maine than the national average, by approximately 12 percentage points in 2011 (Figures 3-4 and 3-5).



**Figure 3-4: National High Cost Program Disbursement by ETC Type**



**Figure 3-5: Maine Host Cost Program Disbursement by ETC Type**

In 2012-2013, Maine also received disbursements under the new incremental Connect America Fund and its subprogram the Mobility Fund, both of which have potential to provide Maine significant support in the future. With still unserved and many underserved high cost areas of the state, Maine is a prime target for Connect America funding. Whether it ultimately receives funding under this specific mechanism is dependent upon whether Maine’s price cap carrier—FairPoint Communications—accepts and can meet the specific broadband buildout obligations of the funding and financial investment required.

In Phase I, Round 1, for example, FairPoint accepted incremental support of \$2 million out of \$4.8 million offered for the buildout of broadband infrastructure for 53 Vermont towns and 1 Maine town (South China), with the obligation to provide 4 Mbps down and 1 Mbps up to one unserved location for every \$775 in support. Actual disbursement to Maine in 2012 was \$5,000. Under Round 2, FairPoint accepted the full \$1.03 million offered for the buildout of 44 Maine towns, again to provide 4 Mbps down and 1 Mbps up to unserved locations, allocating \$550 per household with less than 3 Mbps down and 768 kbps up, \$775 per household with dialup only. Actual disbursement to Maine in 2013 was \$903,000.<sup>80</sup> Figure 3-6 maps the Maine town locations receiving the benefits from the Connect America Fund Phase I, Rounds 1-2, support.

FairPoint's 2013 Annual Report outlines significant financial constraints limiting cash flow and financing options to fund both operations and future capital expenditures, such as investments in broadband buildout.<sup>81</sup> In addition to substantial indebtedness, the company cites intensifying competition for voice and data services from cable companies, which offer packages of voice and data bundled with video services, and wireless providers, which offer local and long distance voice services along with mobile data delivery. Competitive dynamics have adversely impacted FairPoint's access lines (resulting in a 4.9 percent line loss in 2012 and 5.0 percent in 2013), broadband subscriber growth rates, and revenues.

The report indicates that the FCC reforms will further unfavorably impact access lines and network access revenues, in particular the termination of interstate and intrastate access charges, representing over 30 percent of the company's total revenues in 2013. In addition, FairPoint anticipates significant reductions in the amount of subsidy it receives from the Connect America Fund as compared to the current Frozen High Cost support, citing that it cannot risk accepting funding if the obligations exceed the funding itself.

To offset the impact of the High Cost reforms, FairPoint made two requests in 2013 for telephony support: (1) to the FCC, for the use of frozen high cost funds originally targeted for broadband; and (2) to the MPUC for the use of \$66.9 million annually in Maine USF funds targeted for telephone operations of smaller rural companies.

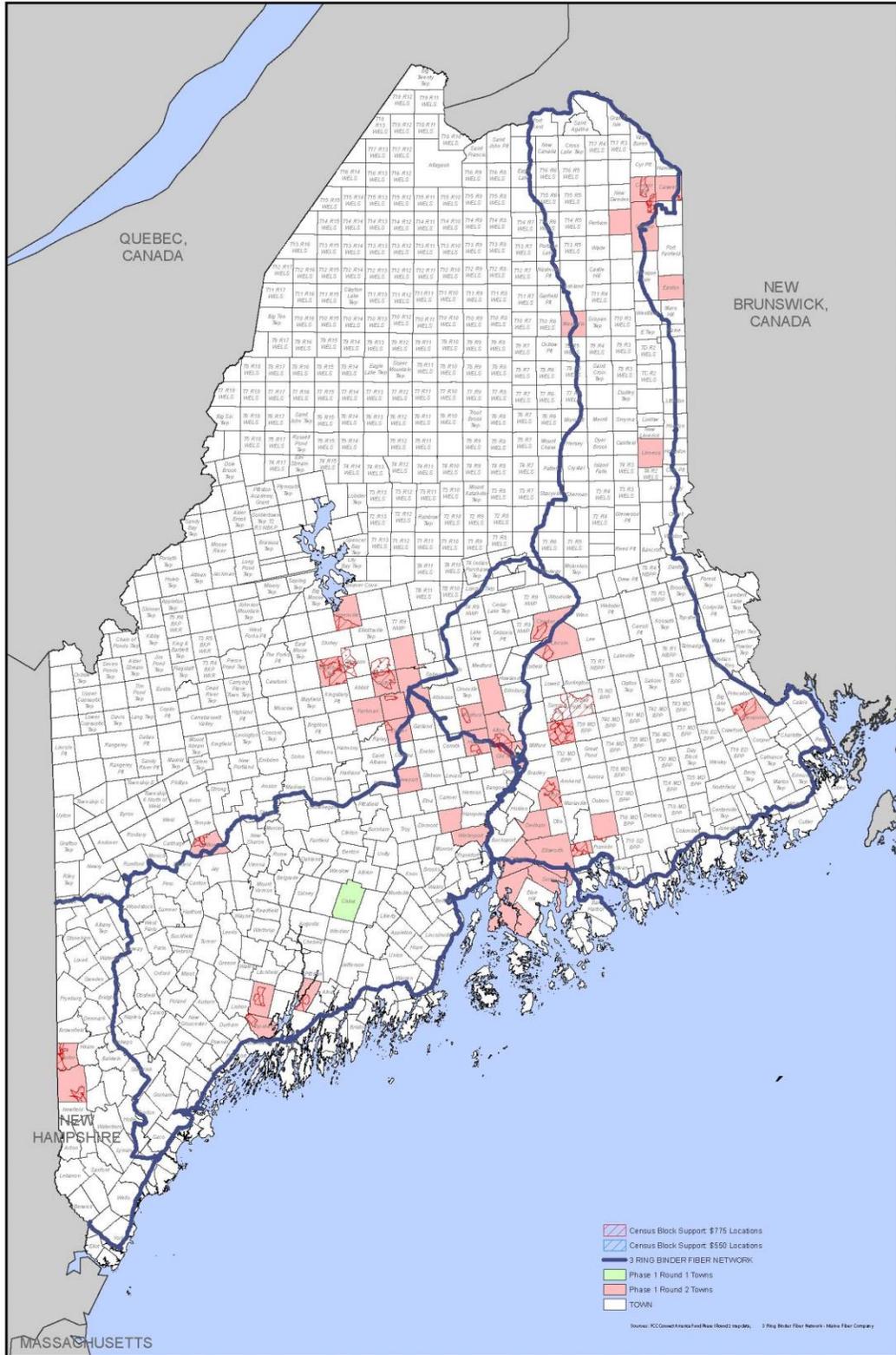
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<sup>80</sup> The 44 Maine towns that will be upgraded or have new high-speed broadband access include: Alexander, Alton, Blanchard Township, Bowdoin, Bowerbank, Bradford, Brooksville, Caribou, Caswell, Chester, Clifton, Connor Township, Dedham, Dexter, Dover-Foxcroft, Dresden, Eastbrook, Easton, Ellsworth, Fletcher's Landing, Greenfield TWP, Greenville, Guilford, Hudson, Lagrange, Lincoln, Linneus, Masardis, Newburgh, Newport, Old Town, Orland, Parkman, Parsonsfield, Penobscot, Porter, Sangerville, Sargentville, Sedgwick, Surry, Topsham, Wilton, Winterport and Woodland.

<sup>81</sup> <http://phx.corporate-ir.net/phoenix.zhtml?c=122010&p=irol-irhome>

Figure 3-6

### Connect America Phase 1 Rounds 1 & 2 Towns in Maine



FairPoint requested of the FCC a partial waiver of the spending obligations on broadband under the Frozen High Cost Fund. In response, the FCC clarified the rule that in effect allowed the company to use the fund for broadband buildout, or for maintaining its copper-based networks, or for both. As of May 2014, a decision on FairPoint's request to the MPUC, which if approved will significantly raise customer surcharges, will not be made until after the Maine State Legislature reviews the case and the allocation of MUSF basic service subsidies in general in early 2015.<sup>82</sup> A timeline of FairPoint's agreements and obligations to extend broadband service in Maine since its acquisition of Verizon-Maine is provided below.

#### Price Cap Carrier Broadband Buildout in Maine—Agreements & Obligations

**2008.** FairPoint acquires Verizon-Maine and agrees to make broadband (DSL) available to 90% of customers connected to its network within 5 years.

**2010.** Obligation of 90% is lowered to 87% when FairPoint files for bankruptcy.

**2012.** FairPoint accepts Connect America Phase I Round 1 support for \$2 million, less than half of \$4.8 million allocated, for buildout of 1 Maine and 53 Vermont towns (4 Mbps down/1 Mbps up to one unserved location for every \$775 in support); disbursement to Maine is \$5,000.

**2013.** FairPoint agrees to extend broadband service to 85% of Maine customers by August 2013 and 87% by April 2014, to maximize federal broadband support, and to invest millions in upgrading broadband facilities and service.

FairPoint requests limited waiver of FCC requirement to repurpose frozen CAF Phase I support to build and operate broadband-capable networks in areas unserved by an unsubsidized competitor.

FairPoint accepts Connect America Phase I Round 2 support of \$1.03 million for buildout of 44 Maine towns (\$550 per home with less than 3 Mbps down/768 kbps up, \$775 per household with dialup only); disbursement to Maine is \$903,000.

FCC Wireline Competition Bureau clarifies that price cap carriers may use frozen high-cost support to (1) recover the costs of past network upgrades to extend broadband-capable networks in areas substantially unserved by an unsubsidized competitor, (2) maintain and operate existing networks in such areas, or (3) a combination of both. Price cap carriers are not required to use one-third of their frozen support for new capital investment in 2013.

FairPoint requests \$66.9 million annually from Maine USF to subsidize basic telephone service and cover cost of POLR services, which would require an increase in customer surcharges from \$8.3 million annually to \$75.2 million.

The FCC has indicated that Connect America Fund allocations not accepted by and disbursed to price cap carriers will be made available under other related mechanisms to as many different types of providers as possible, including non-traditional ETCs, such as cable operators, electric utility cooperatives, and satellite

<sup>82</sup> FairPoint's request for MUSF monies to support provider of last resort (POLR) services raises the larger policy question of how the fund, originally established to subsidize small local incumbents that serve high cost areas, should be allocated. To enable the State Legislature to address this question, State Representative Barry Hobbins sponsored LD 1479, a bill to clarify telecommunications regulation reform. Notwithstanding a veto by Maine Governor Paul LePage, the bill became law (Chapter 600) in May 2014. [http://www.mainelegislature.org/legis/bills/bills\\_126th/chapters/PUBLIC600.asp](http://www.mainelegislature.org/legis/bills/bills_126th/chapters/PUBLIC600.asp)

providers.<sup>83</sup> In early 2014, for example, in the interim between Connect America Phase I and Phase II, the FCC solicited EOIs from a wide range of entities interested in deploying robust, scalable networks, wireless or wireline, in price cap carrier high cost areas, the eligibility for which is mapped in Figure 3-7.

Connect America Fund allocations not accepted by and disbursed to price cap carriers will be made available to non-traditional ETCs, such as cable operators, electric utility operators, and satellite providers.

Eighteen Maine stakeholders—municipal governments, telecommunications carriers, service providers, and Networkmaine<sup>84</sup> for schools and libraries—responded to the FCC’s solicitation, requesting from \$144 million to \$176 million in funding.<sup>85</sup> The types of projects and total amount requested will assist the FCC in determining the size of the budget for the upcoming proposals for the Experiments, the use of a competitive bidding mechanism, and the longer-term functioning of the Connect America Fund itself.

A second component of the Connect America Fund under which Maine has benefited is the Mobility Fund. During Phase I, US Cellular was awarded \$1.4 million in 2012 to support mobile broadband buildout in three areas of Washington County still unserved by 3G; \$473,000 of this award was disbursed in 2013 (Figure 3-8). Maine Tribal areas were not eligible for Tribal Phase I of this program as they were already served by at least 3G. Although the FCC has yet to determine eligibility for future phases of this fund, it is exploring whether to retarget Phase II support to ensure continued deployment and preservation of 4G LTE mobile broadband service and preservation of mobile voice and broadband service in high cost areas. This program will offer opportunity for wireless carriers, such as US Cellular, to expand its reach into unserved and underserved areas of the state, particularly those with difficult terrain, and to compete against rural incumbents.

Although Maine is benefiting from the High Cost offsets, the new Connect America Fund, and the Mobility Fund, the state received \$3.4 million less in overall High Cost funding in 2013 than in 2012, and close to \$5 million less than in 2011. As of 1Q2014 (Table 3-3), approximately \$1.6 million of the loss is to funds annually disbursed to rate of return carriers and \$3.7 million to funds annually disbursed to the competitive carrier US Cellular. Based on 1Q2014 quarterly projections, the eventual loss of the transitional Frozen High Cost Fund subsidy to FairPoint will be \$7.8 million annually.

<sup>83</sup> [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0610/FCC-14-54A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0610/FCC-14-54A1.pdf)

<sup>84</sup> Networkmaine is a unit of the University of Maine System that provides Maine schools and libraries with internet connectivity at little or no cost through the Maine Schools and Libraries Network (MSLN). It also operates MaineREN, a facilities-based regional optical network for serving Maine’s research and education community. <http://networkmaine.net/>

<sup>85</sup> <http://www.fcc.gov/encyclopedia/rural-broadband-experiments>

Figure 3-7

### Rural Broadband Experiments Eligible Locations in Maine by U.S. Census Tract

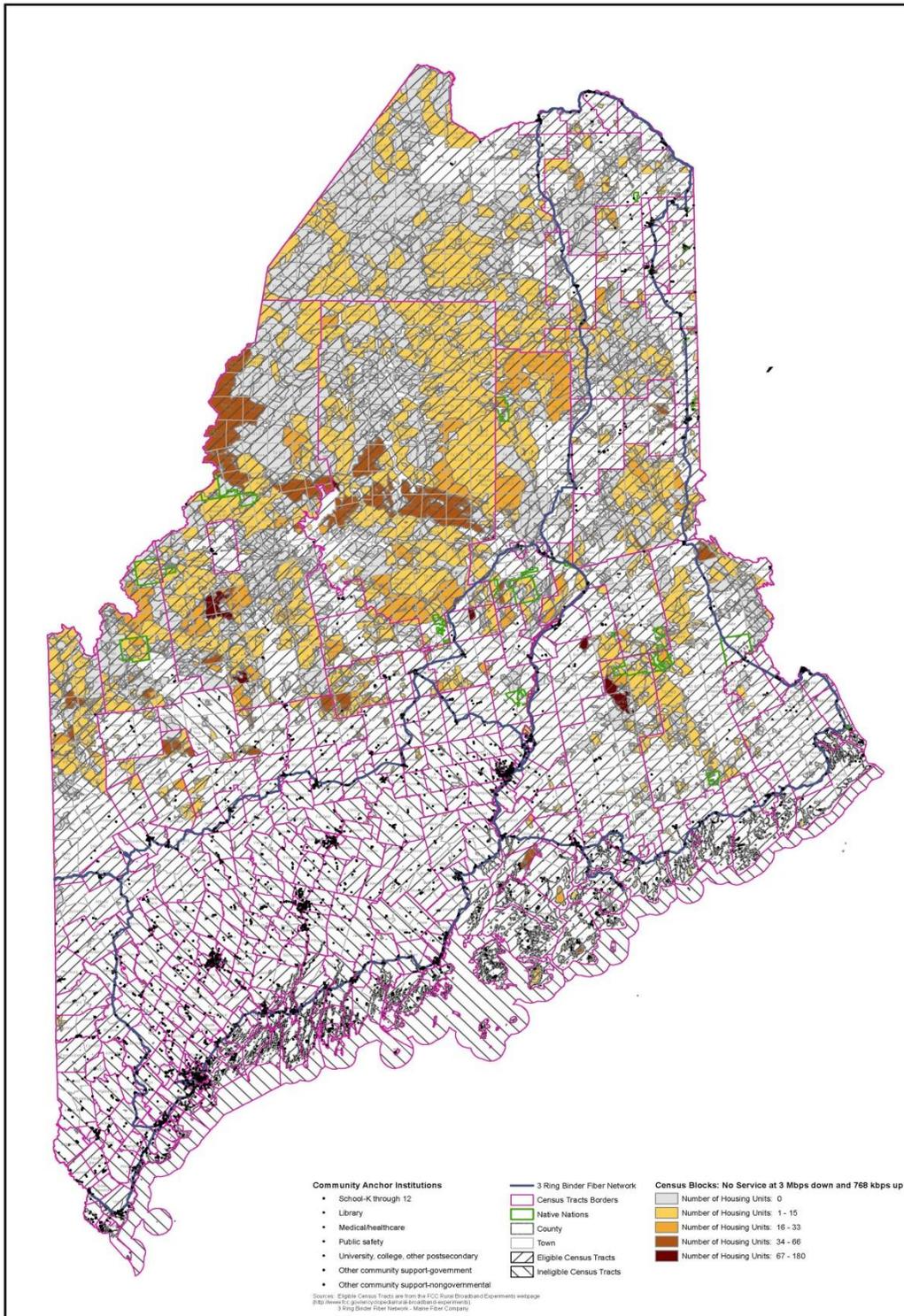


Figure 3-8

### Mobility Fund, Phase I 3 Areas in Washington County (not served by 3G)

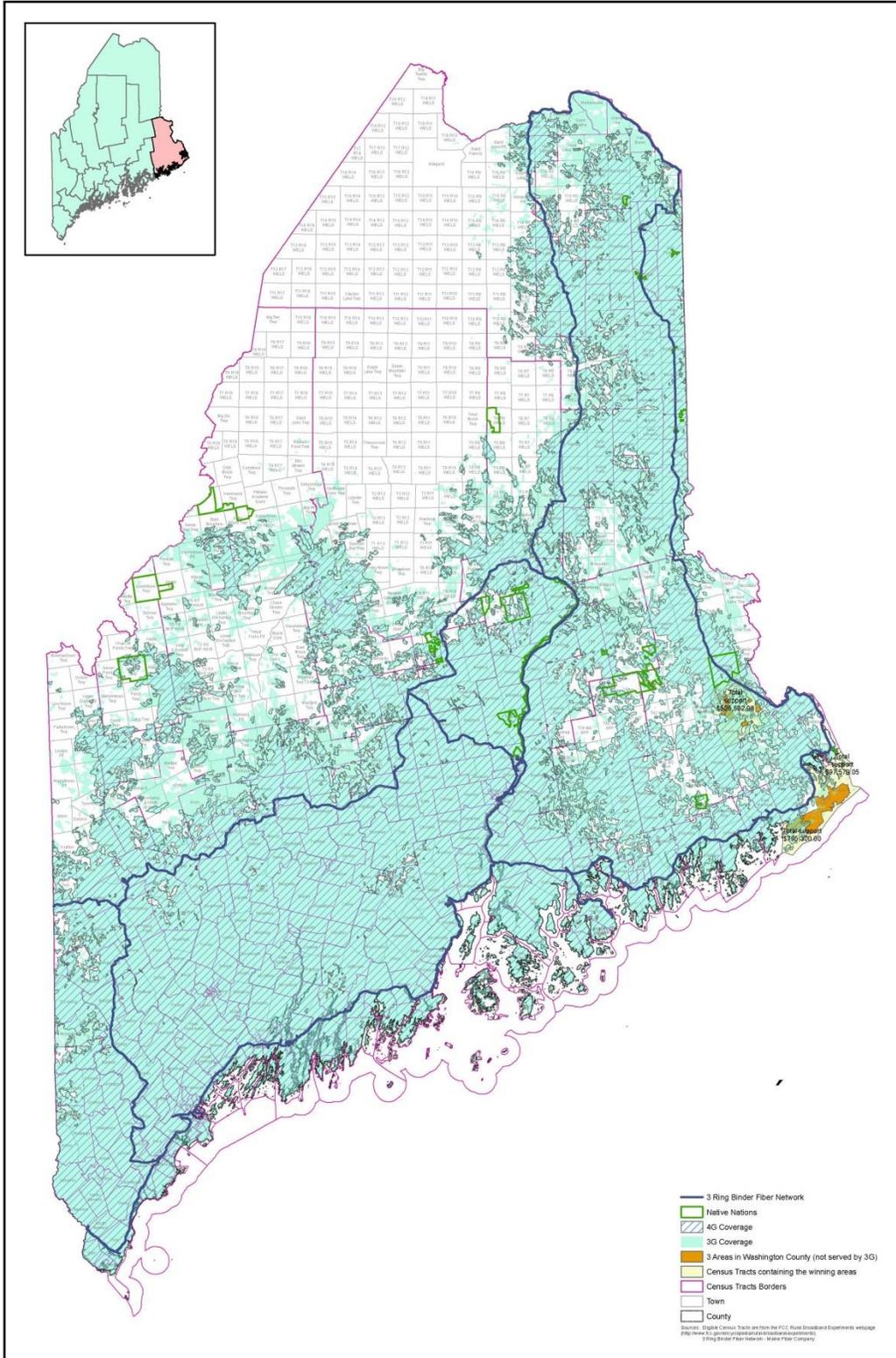
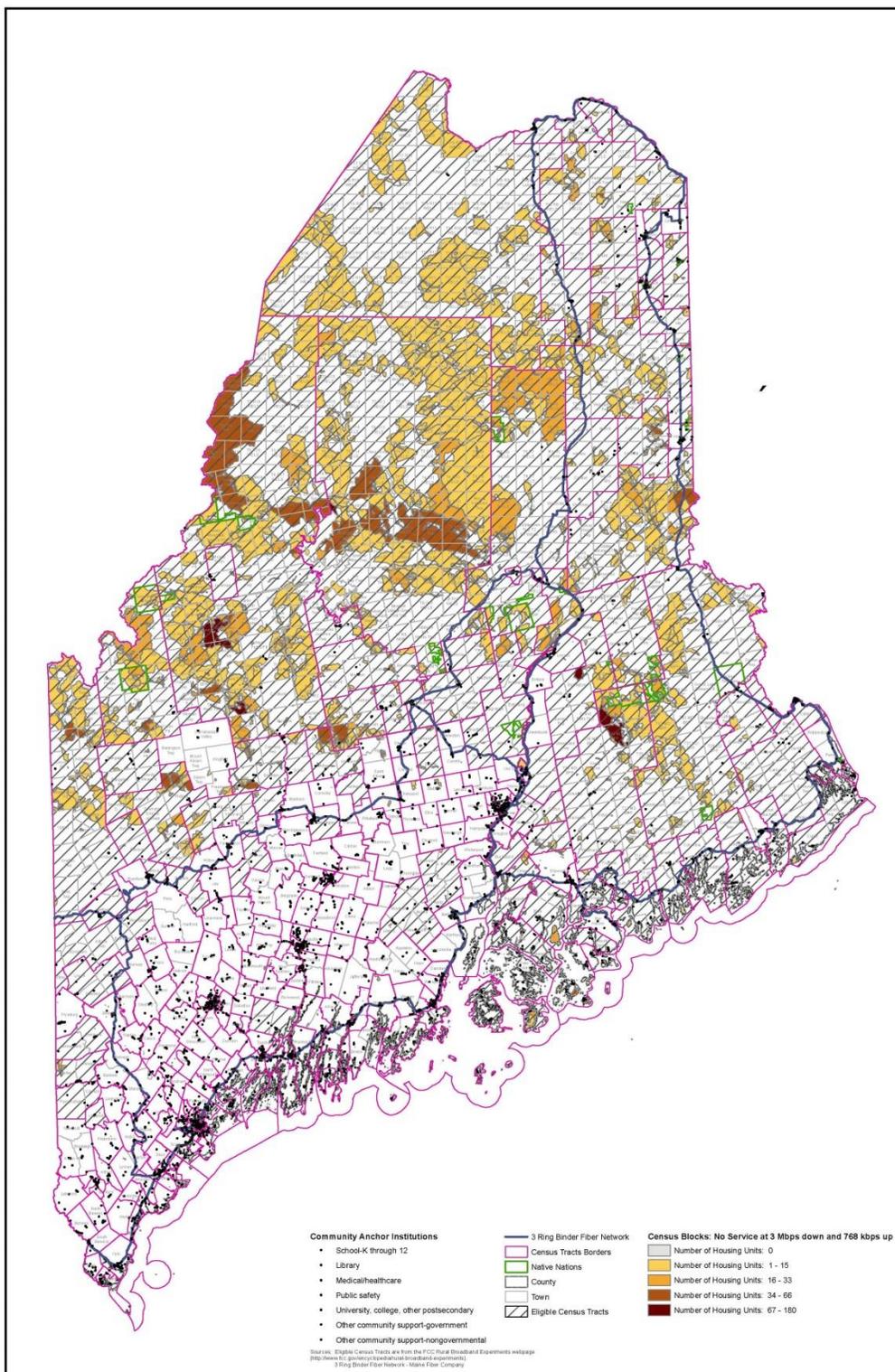


Figure 3-9

## Extremely High Cost Areas Eligible Locations for the Remote Areas Fund



Lastly, as a predominantly rural state, many areas of Maine will be eligible only for extremely high cost area support under the Remote Areas Fund, the third and much smaller fund component of the Connect America Fund (\$100 million annually), targeted to 1 percent of the US population in locations not eligible for CAF Phase II model-based funding (\$1.8 billion annually). That ETCs and other entities are now permitted by the Omnibus Order to bid on extremely high cost areas during the CAF Phase II competitive bidding process may offset this limitation. Figure 3-9 shows census tracts in Maine that have one or more extremely high cost locations.

In this very fluid stage of USF reform, new and rapidly developing opportunities have potential to fill some of the revenue gap in Maine, including those targeted to a broad range of businesses, not for profits and government organizations. Further discussion of Maine’s positioning and potential response to the impacts of the reforms, replacement mechanisms and new broadband-focused programs is provided in Sections 3-3 and 3-4.

### 3.1.2 Low Income Program Funding in Maine

With 13.3 percent of Maine’s population below poverty level, eligibility for funding under the Low Income Program, which supports ETC discounts to low-income customers, is high.<sup>86</sup> As of 3Q 2013, 70,851 Maine citizens subscribe to the program, 100 of which are Tribal consumers.<sup>87</sup> Given that 1.3 percent of Maine’s population of 1.3 million is below poverty level, however, support from this program remains an untapped resource.<sup>88</sup>

The disbursement of funds through this program has traditionally been through many of the same wireline incumbents that receive High Cost Program support, though in recent years, the number of competitive wireless carriers receiving funds has risen dramatically, paralleling the growing market for mobile devices in Maine and nationwide (Figure 3-10). In March 2014, for example, the highest single Low Income disbursement in Maine was to TracFone Wireless (\$189,856); FairPoint and its local exchange carriers received the second highest disbursement (\$150,007).<sup>89</sup>

Maine consumers have benefited from fund disbursement for telecommunications service discounts through two Low Income Program mechanisms—Lifeline and Linkup—which reached a high of \$12.8 million in 2012 (Figure 3-11). Since the release of the Lifeline Reform Order in 2012, which eliminated duplicate subscriptions and phased out Linkup—a specific support for initial telephone

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<sup>86</sup> 2010 US Census. <http://quickfacts.census.gov/qfd/states/23000.html>

<sup>87</sup> USAC FCC filing LI08 1Q2014.

<http://www.usac.org/about/tools/fcc/filings/2014/q1.aspx>

<sup>88</sup> <http://quickfacts.census.gov/qfd/index.html#>

<sup>89</sup> <http://www.usac.org/li/tools/disbursements/default.aspx>

connection—the disbursement to Maine dropped to \$7.2 million, with a loss of \$5 million in Lifeline and \$362,000 in Linkup funds in 2013.

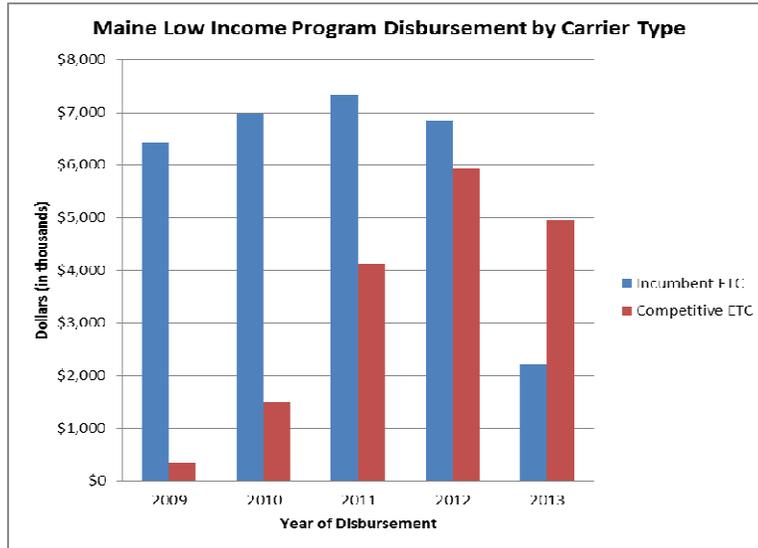


Figure 3-10: Maine Low Income Disbursement by Carrier Type

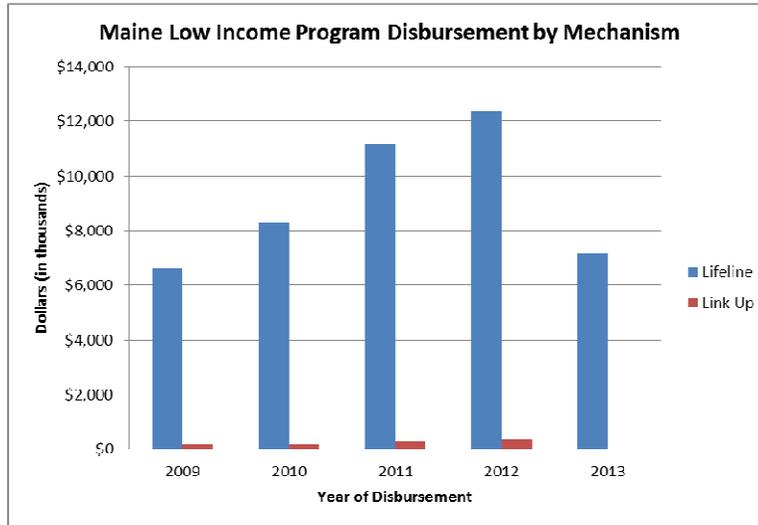


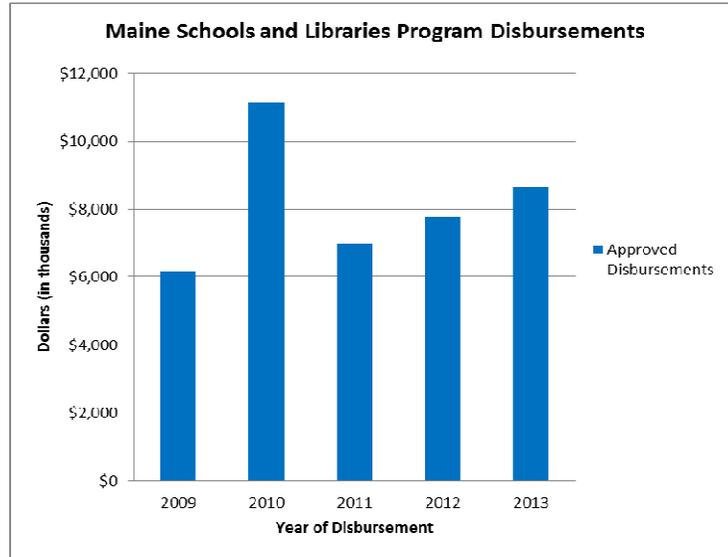
Figure 3-11: Maine Low Income Program Disbursement by Mechanism

Maine did not participate in the Broadband Adoption Pilot Program to study the effects of broadband access to and adoption low income households (Section 2.3.1).

**3.1.3 Schools and Libraries Program Funding in Maine**

The Schools and Libraries Program (E-rate) is the second highest USF disbursement to Maine, with approximately \$8 million in funds per calendar year for discounted costs for telecommunications and internet access services to K-12 schools, school

districts, public libraries, and consortia comprised of these institutions. The Maine Schools and Libraries Network (MSLN), a University of Maine System–led consortium of approximately 900 schools and libraries, manages and files the annual application for E-rate funds, which are applied primarily to Priority 1 internet access services. Individual schools and libraries, both MSLN members and non-members, also apply separately for funding for telecommunications services, also Priority 1. Figure 3-12 shows funding disbursements to Maine schools and libraries from 2009 to 2013.



**Figure 3-12: Maine Schools and Libraries Program Disbursements**

As with the High Cost and Low Income programs, Maine’s eligibility for E-rate funding is high, given the percentage of population below poverty level (13.3%) and its ruralness.<sup>90</sup> Based on these criteria, Maine’s schools and libraries have received funding for service discounts that range from 40 percent to 90 percent, with an average of 70 percent funded. The Maine Telecommunications Education Access Fund (MTEAF) has provided the required local contribution of 30 percent, which is approximately \$3.8 million annually.<sup>91</sup>

<sup>90</sup> Discounts for E-rate support, which range from 20 percent to 90 percent of costs of eligible services nationwide, depend on the level of poverty as measured by the percentage of students eligible for the National School Lunch Program and the urban or rural location of the population served. According to the USAC 2013 Annual Report, twice as many schools and libraries nationwide are funded in urban rather than in rural areas as of 2013.

<sup>91</sup> The MTEAF was formed in 1999 to support discounts to qualified libraries, schools and the Raymond H. Fogler Library at the University of Maine for telecommunications, internet access, computers, training and content. Telecommunications carriers pay into the fund based upon an assessment of revenues on their intrastate telephone bills. <http://www.maine.gov/mpuc/msln/index.html>

For the 2013-2014 funding year, the FCC made commitments under E-rate to fund 589 funding requests from 281 Maine applicants, including individual schools and libraries, school districts, library consortia, and the MSLN, for the amount of \$8.4 million, almost \$2 million less than the original request of \$10.1 million, calculated to cover E-rate's 70 percent of service costs. Almost half of the FCC-committed amount (\$3.8 million) will provide discounts of 70 percent on internet access and data transport services for MSLN participants.<sup>92</sup> Although over 60 providers<sup>93</sup>—local and national—participate in the program in Maine, a large majority of the authorized disbursement will support discounts on services from FairPoint.

Maine schools and libraries across the state are taking advantage of the E-rate program, at least as much as their local contribution allows. The more the billed entities are able to contribute, the more E-rate funding they are eligible to receive. Given that the MTEAF is shrinking, due to the shrinking intrastate retail revenues upon which it is based, another source of local contribution for E-rate funding will be increasingly necessary. In 2014, for example, MSLN participants will pay a \$1 per student per year “participation fee,” which will generate \$180,000 of local funding for this purpose, allowing Maine to bring in \$420,000 more in E-rate funding for \$600,000 worth of services.<sup>94</sup>

Maine students are likely to be within the 1 percent of students that ConnectED will not support, particularly those attending island schools and using island libraries.

The new ConnectED program, which is designed to ensure that 99 percent of US students have affordable access to broadband at speeds no less than 100 Mbps, also promises to benefit Maine schools and libraries, particularly the 52 percent still served by copper-based rather than fiber networks, the former of which do not provide the high-speed connectivity and broadband capacity necessary for the use of innovative digital and long-distance learning tools.

In addition to supporting high speed network buildout to the premise, the program may address another gap in support for Maine schools and libraries, namely the lack of E-rate funding in recent years for internal connections within buildings (Priority 2 services), bringing internet to the classroom and broadband to the student. Cognizant of the gap, the FCC in March 2014 sought comment on structuring the program to increase focus on connectivity inside classroom and library walls.

It is important to note, and anticipate in advance, that ConnectED will *not* support 1 percent of students. Maine students, particularly those attending island schools and

<sup>92</sup> <http://www.usac.org/sl/tools/commitments-search/Default.aspx>

<sup>93</sup> Providers include rural wireline telecommunications carriers, cable and wireless carriers, fiber-leasing companies, internet service providers, and educational technology companies.

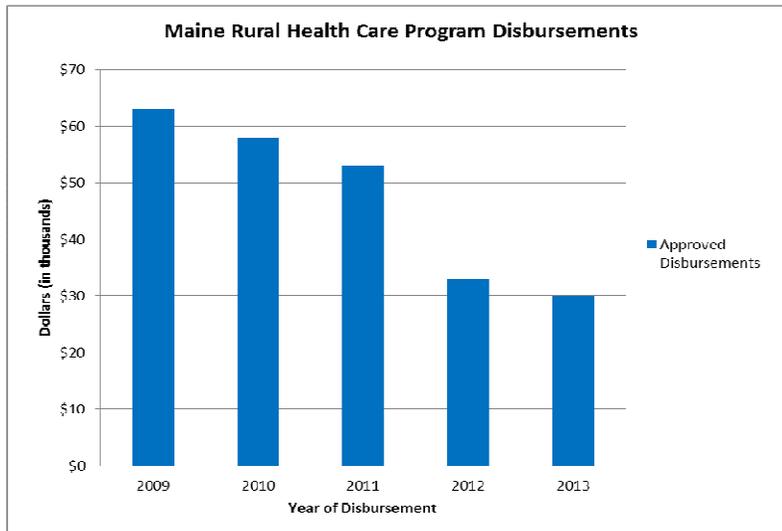
<sup>94</sup> Interview with Jeff Letourneau, Executive Director, Networkmaine, April 10-11, 2014.

using island libraries, most serviced over microwave, are likely to be within that 1 percent. In addition, there is conjecture that the FCC, in its move to support broadband access, will eventually cut off funding to schools and libraries for Priority 1 telephone services.

The ConnectED demonstration projects, as yet undefined, will also be a potential funding source for Maine schools and libraries seeking the opportunity to pilot projects that test types of broadband connection, adoption and application. Maine stakeholders did not take advantage of Learning on the Go, a \$9 million pilot program that in 2011-2012 funded 20 projects to support 24x7 wireless internet access. Informed decisions on participating in similar opportunities in the future will be critical as they potentially lead to significant infusions of one-time monies for driving forward specific initiatives. More discussion on the impacts, challenges and opportunities of E-rate reform is provided in Section 3.3.

**3.1.4 Rural Health Care Program Funding in Maine**

Given Maine’s ruralness, public and not-for-profit health care facilities in Maine’s communities have been eligible and received discounts for telecommunications and internet access services under the legacy Rural Health Care Program, channeled through a variety of local exchange telecommunications carriers, cable companies and internet service providers. Compared to other USF programs, Maine’s annual disbursement under the Rural Health Care Program has been significantly less, at an average of \$47,000 annually under the legacy mechanisms, with reduced disbursements of \$33,000 and \$30,000 in 2012-2013 calendar years (Figure 3-13).



**Figure 3-13: Maine Rural Health Care Program Disbursements**

Maine has received significant additional funds, however, through its participation in the Rural Health Care Pilot Program, a reform established in 2006 to provide up to 85 percent of costs for building statewide or regional broadband networks (Table 3-5). Two Maine-based consortia applied and were awarded funds for this purpose in 2007—the Rural Western and Central Maine Broadband Initiative and the New England Telehealth Consortium (NETC).

**Table 3-5: Maine Rural Health Care Pilot Program Commitments and Disbursements**

|                                              | 2012         | 2013         |
|----------------------------------------------|--------------|--------------|
| <b>Commitment (Funding Year 2009)</b>        | \$16,491,000 | \$13,776,000 |
| <b>Approved Disbursement (Calendar Year)</b> | \$814,000    | \$5,821,000  |

The Rural Western and Central Maine Broadband Initiative was awarded \$3.6 million with a 15 percent local contribution (\$357,840) from the ConnectME Authority to build a broadband network connecting healthcare facilities across western and central Maine, including Franklin County and parts of Oxford, Cumberland and Androscoggin counties. The original proposal was scaled down to eliminate for-profit facilities ineligible for funding, a requirement not clarified in the grant process. The actual cost of the network, delivered in 2010, was \$724,080, with the Authority match \$108,612. Time Warner, under a one-time irrevocable right to use (IRU) contract, received a single payment for 10 years of Ethernet service.

The network now connects seven facilities, including hospitals and federally qualified health centers (FQHCs) for interoperability and the rapid transmission of electronic health records and large radiology imagery (Figure 3-13). The consortium will not seek additional funding available under the Healthcare Connect Fund to add facilities in the area, as the large majority of these facilities are for-profit and ineligible to receive the 85 percent funding (Figure 3-14).<sup>95</sup>

The second consortium—NETC—was awarded \$24.6 million to build a broadband network for healthcare facilities over a three-state area, including Maine, New Hampshire, and Vermont, with the original plan to connect 400 sites, 200 in Maine.

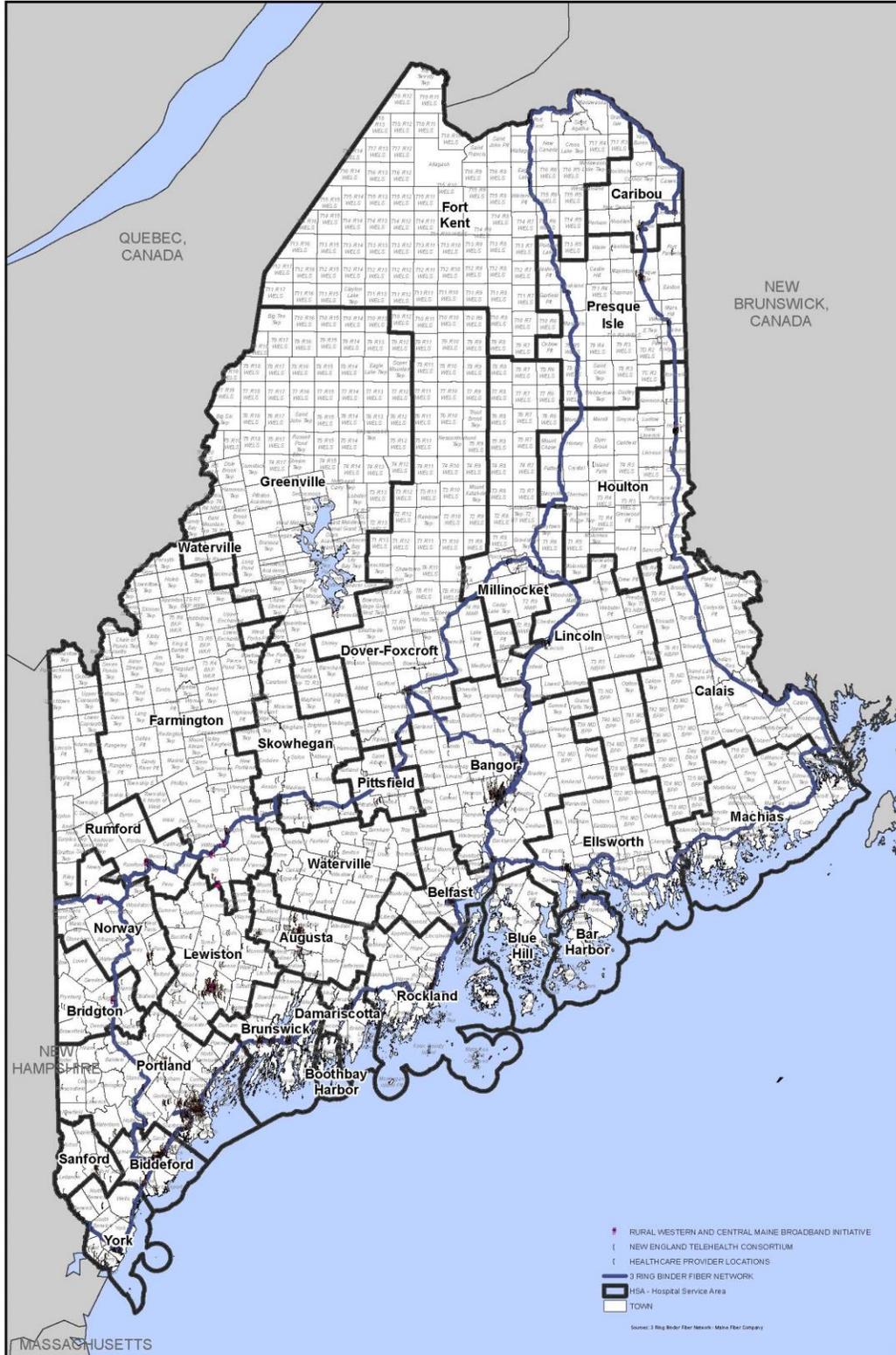
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<sup>95</sup> Interview with Ralph Johnson, Chief Information Officer, CIO, Franklin Community Health Network, January 14, 2014. <http://www.usac.org/rhcp/vendors/posted-services.aspx#ME>; <http://apps.fcc.gov/ecfs/document/view.action;jsessionid=z0J1SfpQh2Thdk8mNZxdkyVvSDMYBRLLJ9QyggpPHvr3DnpctGTX!153728702!-1613185479?id=7520945284>

Figure 3-14

### Maine Healthcare Facility Locations Served by Rural Health Care Pilot Program Consortia

WIRED AND FIXED WIRELESS TECHNOLOGIES: FCC SPEED GREATER THAN OR EQUAL TO TIER 3  
(Maximum advertised download and upload speeds: Greater than or equal to 3Mbps)



As of early 2014, approximately \$12.5 million of the award had been spent (\$4,532,110 in Maine) to connect 305 sites (111 in Maine) that share telehealth and telemedicine services, research, clinical expertise, IT resources and educational opportunities. Another \$11.1 million is allocated (\$2,826,811) and will be spent over the next two years; \$1.3 million remains unallocated and is available for healthcare sites to join the network.

Maine has received significant funds to build broadband networks for healthcare facilities in the state and beyond through its participation in the Rural Health Care Pilot Program.

Although the pilot expires in 2016, eligibility extends under the Healthcare Connect Fund with no new application required, enabling the addition of new sites. Under the contract, the sites make a 15 percent contribution to costs.<sup>96</sup> ProInfoNet, a Maine-based telecommunications and computer company, developed the network design at a non-recurring cost of \$877,805. ProInfoNet is also managing the implementation of the NETC network and the network operations center. FairPoint Communications provides Ethernet services, and FirstLight Fiber, a New York provider, hosts one of the two network cores. Oxford Networks provides circuits to the Internet and Internet2 and hosts one of the network cores; HughesNet provides satellite connections for mobile clinics; Cogent Communications provides internet services; and Windstream Communications provides Cisco core and edge routers.

It is important to note that both consortia experienced a lead-time of several years between award and disbursement and unexpectedly high administrative costs, which the funding does not cover.<sup>97</sup> In addition, the pilot program revealed inefficiencies and unnecessary regulatory hurdles that the FCC is seeking to resolve in the administration of the new Healthcare Connect Fund.

To take advantage of Healthcare Connect funding, Maine, through the Department of Health and Human Services (DHHS), has submitted an application to form a consortium of more than 50 healthcare providers and has also submitted a draft request for proposals, both of which are now under FCC review through USAC. A decision regarding the two documents is expected in the summer of 2014.

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<sup>96</sup> Interview with Brian Thibeau, President, New England Telehealth Consortium, January 14, 2014. Also [http://www.usac.org/\\_res/documents/rhc-pilot-program/pdf/search-postings/2009/New-England-Telehealth-scope-00.pdf](http://www.usac.org/_res/documents/rhc-pilot-program/pdf/search-postings/2009/New-England-Telehealth-scope-00.pdf);

<sup>97</sup> Brian Thibeau reported approximately \$400,000 per year in administrative costs to manage NETC.

### 3.1.5 **Maine State Support**

Maine's funding profile is strengthened by instate programs that augment USF support, including the Maine Universal Service Fund (MUSF), which supports universal statewide access to telecommunications services;<sup>98</sup> the Maine Telecommunications Education Access Fund (MTEAF),<sup>99</sup> which supports discounts to Maine schools and libraries for telecommunications and internet access; the ConnectME Authority Grant Program,<sup>100</sup> which funds high-speed internet access through the development of last mile infrastructure to unserved areas; and the ConnectME Broadband Sustainability Fund,<sup>101</sup> which supports Maine incumbent carriers in the deployment of broadband infrastructure in unserved areas within their service territories.

The MUSF and MTEAF disburse approximately \$8.3 million and \$3.8 million a year respectively and are administered by the Maine Public Utilities Commission (MPUC). The ConnectME Authority Grant Program, administered by the Authority, averages over \$1 million in grants a year, and since 2007 has funded more than \$9 million for projects that have made high speed internet available to over 36,000 Maine households and businesses.

As of April 2014, the Authority's Broadband Sustainability Fund, established in 2009, has collected over \$200,000 and disbursed nearly \$40,000 to incumbent carriers, primarily FairPoint and its local exchanges.<sup>102</sup> With the exception of the Broadband Sustainability Fund, these funds are collected through surcharges on telecommunications customer bills. The Broadband Sustainability Fund is paid for through a levy on entities that purchase or lease federally supported dark fiber in the state, collected by the network owner and operator Maine Fiber Company.<sup>103</sup>

The MPUC no longer administers the federal Lifeline fund to support discounts to low-income consumers in Maine, determining in 2013 that its administrative role did not add extra benefit to Maine and was duplicative of the FCC.

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<sup>98</sup> Traditionally the MUSF has been used to help fund smaller rural ILECs in keeping their long distance access rates low. The MUSF also supports the Communications Equipment Fund, public interest payphones, and the telecommunications relay service, which facilitates telephone calls between people with hearing and speech disabilities. 35-A MRSA §7104; <http://www.mainelegislature.org/legis/statutes/35-A/title35-Ach0sec0.html>

<sup>99</sup> 35-A MRSA §7104B

<sup>100</sup> 35-A MRSA §9215

<sup>101</sup> 35-A MRSA §9216

<sup>102</sup> <http://www.maine.gov/connectme/about/docs/ConnectME-AnnRpt2013.pdf>

<sup>103</sup> The Maine Fiber Company was formed to build the middle-mile dark fiber network in Maine under the federally funded Three Ring Binder Project. The network is largely open access and available to carriers and service providers on a non-discriminatory basis.

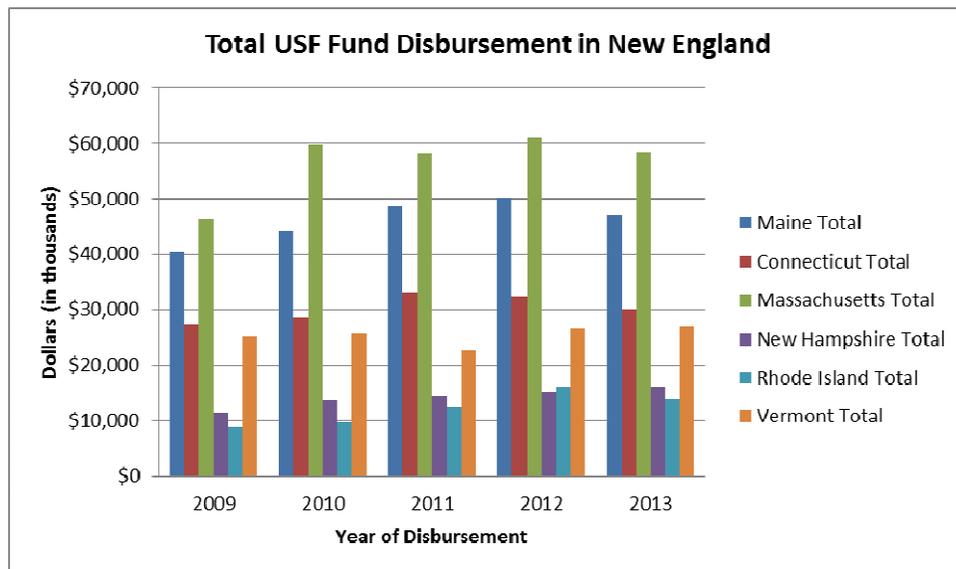
**3.2 MAINE AND NEW ENGLAND**

Maine’s status as a USF recipient is relatively high among other New England states (Figure 3.15), with only Massachusetts receiving a higher average of total funds from 2009 to 2013 (\$57 million). Massachusetts has received the most support from each of the legacy programs, with the exception of the High Cost Program, from which Maine has benefited more than any other New England state (Figure 3-16). Maine ranks second in annual average support (\$46 million); Connecticut, third (\$30 million); Vermont, fourth (\$25 million); New Hampshire, fifth (\$14 million); and Rhode Island, sixth (\$12 million).

In New England, Maine receives the largest annual net benefit from the USF, with Vermont the second largest. The other New England states pay out more than they receive.

Maine and Vermont have received the most funding on an annual basis from the legacy High Cost Program and have lost the most revenue from reforms to the High Cost mechanisms, with temporary gains from the transitional Frozen High Cost Fund. Vermont has benefited more than any of the other New England states from the Connect America Fund, including both ICC and incremental supports. Massachusetts and Connecticut have received more funding from the Low Income Program and the Schools and Libraries Program, with Maine ranked third.

Massachusetts and Vermont have benefited more from the Rural Health Care Program than the other New England states. Maine takes the lead, however, in the amount of funding it has received through its participation in the Rural Health Care Pilot Program to support broadband network infrastructure buildout.



**Figure 3-15: USF Disbursement in New England States**

It is noteworthy that Maine during the last five years has received the largest overall net benefit from USF support (i.e., payments received from the fund in excess of payments contributed to the fund), with Vermont the second largest. The other New England states paid out more than they received. Table 3-6 shows USF payments, estimated contributions and net benefit for 2012.

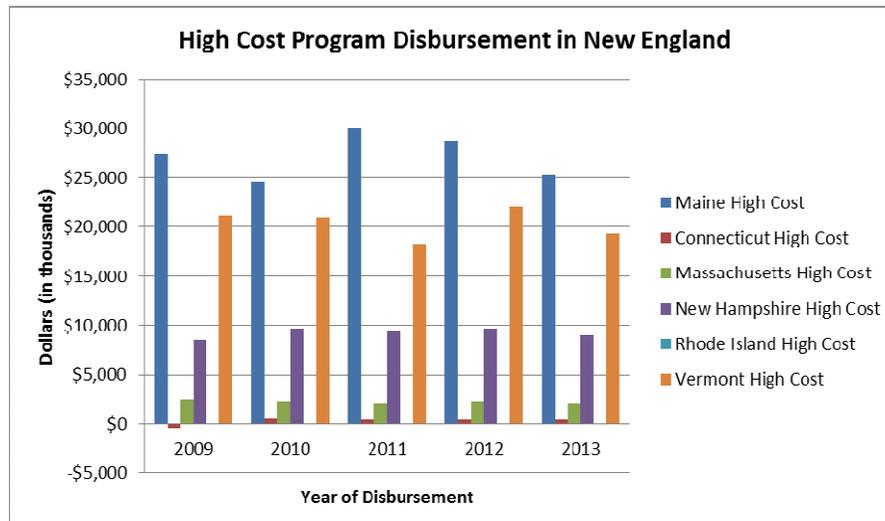
**Table 3-6: Annual USF Payments and Contributions (in Thousands) for 2012<sup>104</sup>**

| State         | USF Payments |            |                     |             |              | Estimated Contribution | Estimated Net |
|---------------|--------------|------------|---------------------|-------------|--------------|------------------------|---------------|
|               | High Cost    | Low Income | Schools & Libraries | Health Care | Total Amount |                        |               |
| Maine         | \$28,784     | \$12,755   | \$7,779             | \$847       | \$50,165     | \$38,747               | \$11,418      |
| Connecticut   | \$454        | \$13,970   | \$18,127            | --          | \$32,551     | \$117,416              | -\$84,865     |
| Massachusetts | \$2,282      | \$38,363   | \$20,172            | \$110       | \$60,027     | \$207,403              | -\$146,476    |
| New Hampshire | \$9,705      | \$2,821    | \$2,618             | \$5         | \$15,149     | \$40,523               | -\$25,374     |
| Rhode Island  | \$29         | \$9,274    | \$6,895             | --          | \$16,198     | \$29,514               | -\$13,316     |
| Vermont       | \$22,059     | \$2,107    | \$2,305             | \$42        | \$26,513     | \$20,889               | \$5,624       |

Notes: USF payment data are from USAC. Health care statistics include primary and pilot programs. Allocation of contributions among states is an FCC staff estimate.

**3.2.1 Maine and New England Under the High Cost Program**

During the past five years, Maine has received an average of \$27 million from the High Cost Program, with a high of \$30 million in 2011 (Figure 3-16).



**Figure 3-16: High Cost Program Disbursement in New England**

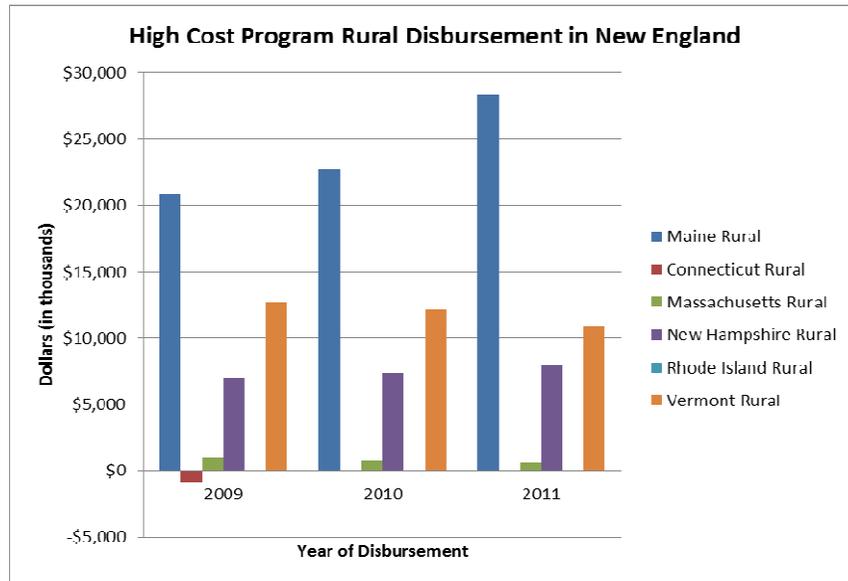
<sup>104</sup> This information is derived from Table 1.13 in the Universal Service Monitoring Report 2013. [http://transition.fcc.gov/Bureaus/Common\\_Carrier/Reports/FCC-State\\_Link/Monitor/2013\\_Monitoring\\_Report.pdf](http://transition.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/Monitor/2013_Monitoring_Report.pdf)

A major factor influencing Maine’s larger disbursement under this program is its ruralness, with 98.8 percent of its 31,000 square-mile-land area identified as rural (Table 3-7).

**Table 3-7: Factors Influencing USF Funding Eligibility to New England States<sup>105</sup>**

| State         | Land Area (sq mi) | Land Area Rural (%) | Total Population | Population Rural (%) | Population Below Poverty Level (%) | Public K-12 Schools |
|---------------|-------------------|---------------------|------------------|----------------------|------------------------------------|---------------------|
| Maine         | 31,000            | 98.83%              | 1.3 million      | 61.34%               | 13.3%                              | 710                 |
| Vermont       | 9,216             | 98.31%              | 626,000          | 61.1%                | 10.0%                              | 393                 |
| New Hampshire | 8,952             | 92.81%              | 1.3 million      | 39.7%                | 8.4%                               | 475                 |
| Massachusetts | 7,800             | 61.71%              | 6.7 million      | 8.03%                | 11.0%                              | 1,934               |
| Connecticut   | 4,842             | 62.28%              | 3.6 million      | 12.1%                | 10.0%                              | 1,271               |
| Rhode Island  | 1,033             | 61.25%              | 1 million        | 9.27%                | 13.2%                              | 344                 |

Vermont, which also has a large percentage of rural land area (98.3%), has received the second largest average disbursement at \$25 million. Figure 3-17 shows rural disbursement of High Cost funds from 2009 to 2011.



**Figure 3-17: High Cost Program Rural Disbursement in New England**

<sup>105</sup> Land area and population data are available at <http://quickfacts.census.gov/qfd/index.html#>; K-12 public school data is available at <http://www.educationbug.org/public-schools/>

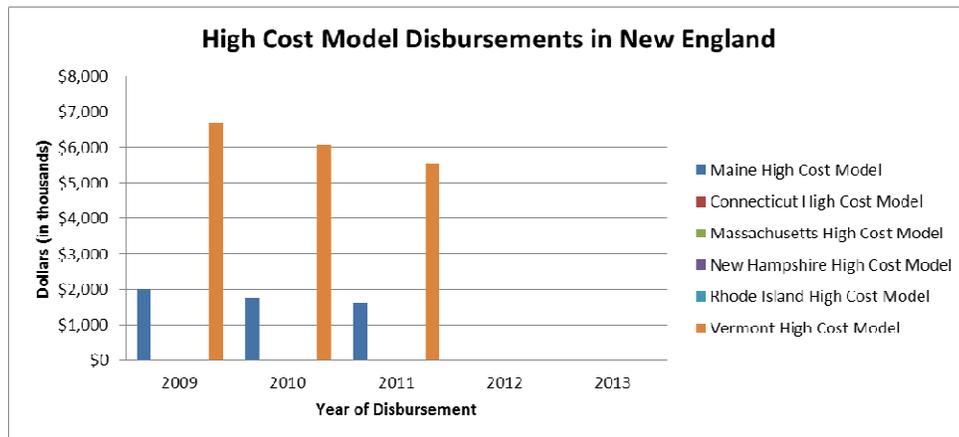
As in Maine, most of the other New England states have felt the impact of High Cost Program reforms during the last two years, particularly in New Hampshire and Vermont, which share a similar profile under this program as Maine (Table 3-8).

**Table 3-8: High Cost Program Profiles of New England Carriers**

| State         | Price Cap Carrier                       | Rate of Return Carriers (#) | Competitive Carrier |
|---------------|-----------------------------------------|-----------------------------|---------------------|
| Maine         | FairPoint Communications <sup>106</sup> | 15                          | US Cellular         |
| New Hampshire | FairPoint Communications                | 9                           | US Cellular         |
| Vermont       | FairPoint Communications                | 8                           | SoVerNet            |
| Massachusetts | Verizon Massachusetts                   | 2                           |                     |
| Connecticut   | Southern New England                    | 1                           |                     |
| Rhode Island  | Verizon Rhode Island                    |                             |                     |

Price cap carriers in each of the states have lost funding under legacy High Cost mechanisms, including HCM, HCL, and IAS (Figures 3-18, 3-19, 3-20), and in general recovered the loss through the transitional Frozen High Cost Fund (Figure 3-23).

As in Maine, rate of return carriers in New Hampshire, Vermont and Massachusetts have also lost funding under the legacy mechanisms HCL, SNA, LSS, and ICLS (Figures 3-21 and 3-22), and have received new funding under the Connect America ICC fund (Figure 3-24). Competitive carriers in both Maine and New Hampshire have lost funds under legacy mechanisms not fully offset by the Frozen High Cost Fund.



**Figure 3-18: High Cost Model Disbursements in New England**

<sup>106</sup> FairPoint has 424,186 access lines in Maine, 347,738 in New Hampshire, and 254,833 in Vermont. <http://phx.corporate-ir.net/phoenix.zhtml?c=122010&p=irol-irhome>

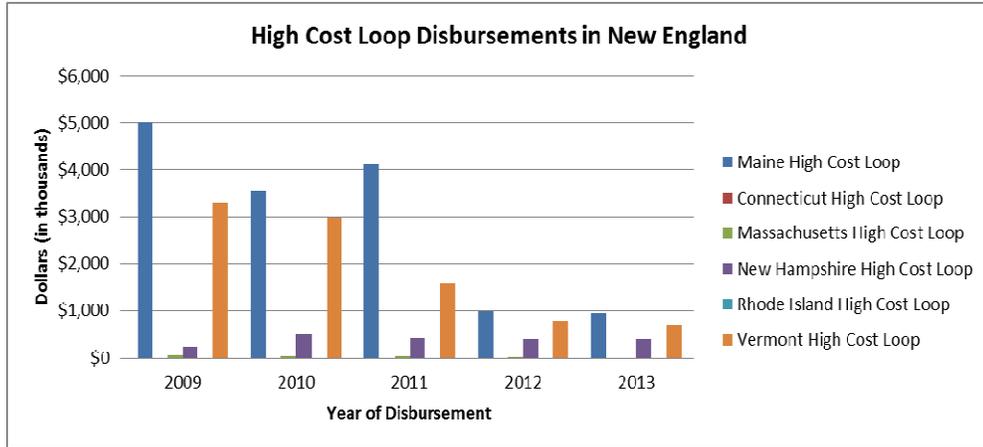


Figure 3-19: High Cost Loop Disbursements in New England

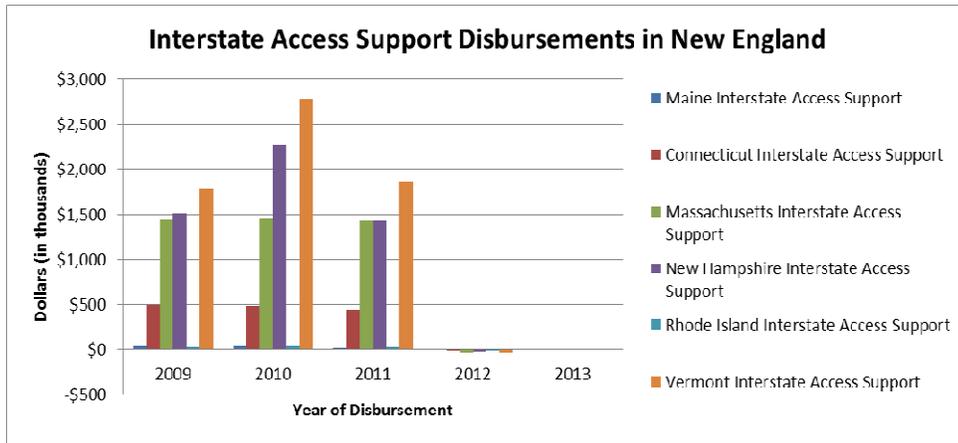


Figure 3-20: Interstate Access Support Disbursements in New England

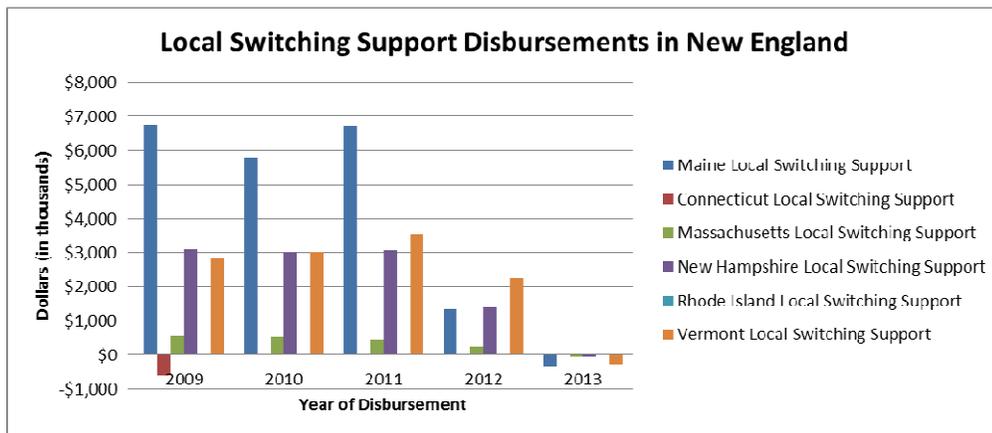
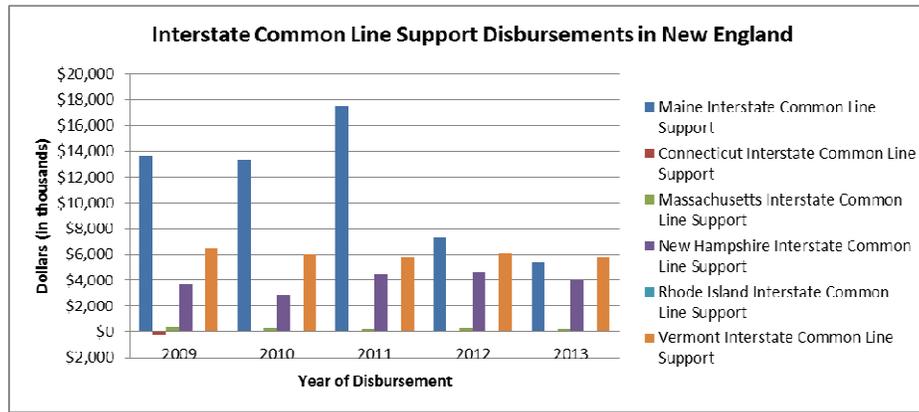
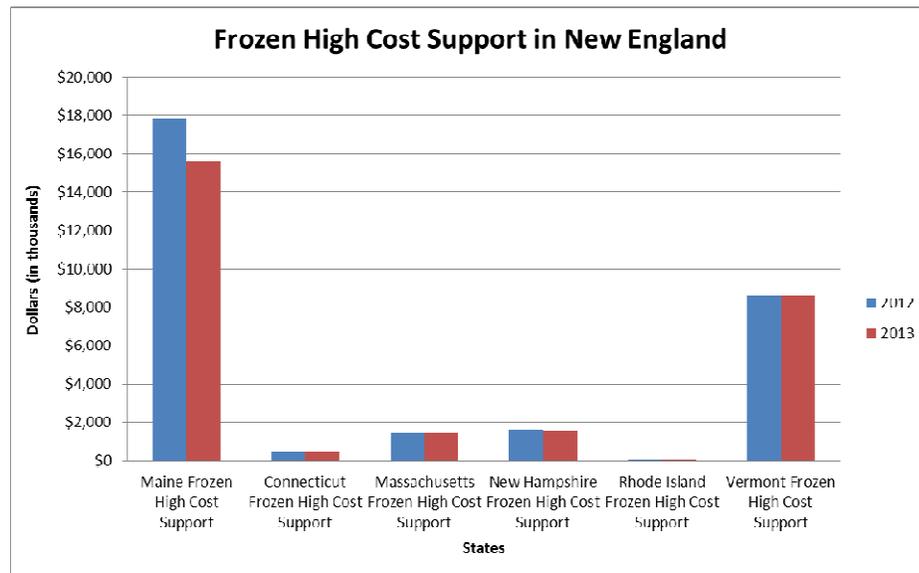


Figure 3-21: Local Switching Support Disbursements in New England

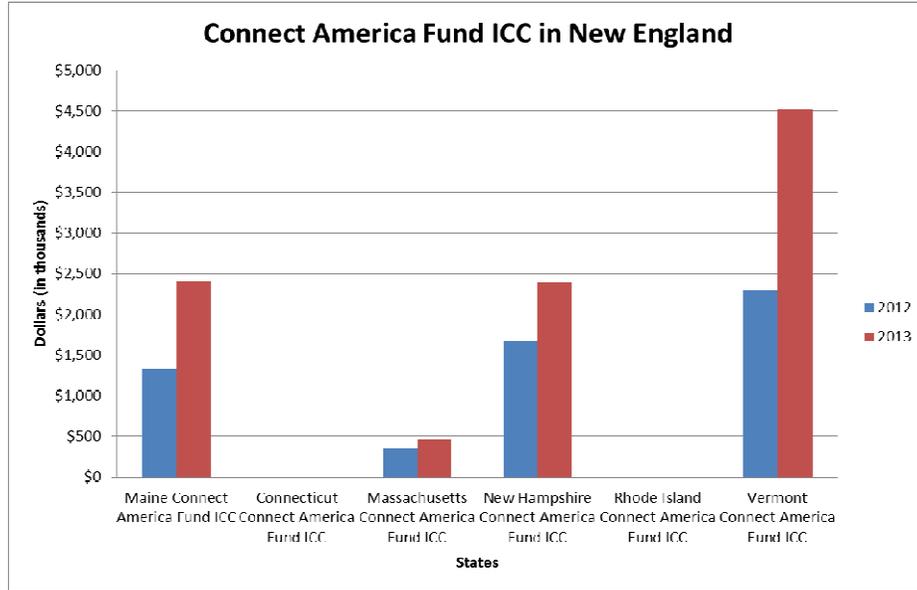


**Figure 3-22: Interstate Common Line Support Disbursements in New England**

Wireline carriers in Maine, New Hampshire and Vermont dependent on High Cost funds are vulnerable to the reform impacts, due first to the transitional nature of the High Cost Frozen Support to price cap carriers, and, second, to the reduced ICLS support to rate of return carriers. FairPoint, the price cap carrier in Maine, New Hampshire, and Vermont, and Maine rate of return carriers are the most vulnerable, given the funding loss that they have either experienced to date or will experience by 2020.

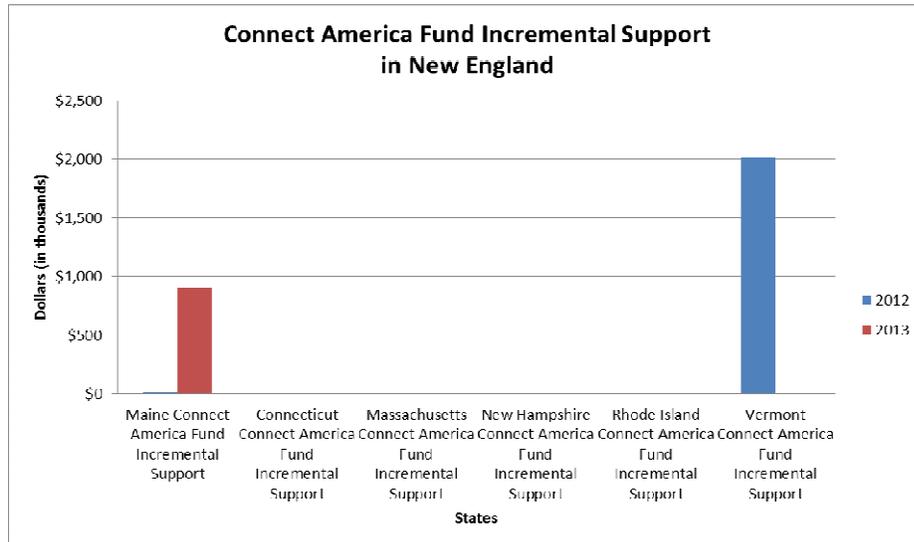


**Figure 3-23: Frozen High Cost Support in New England**



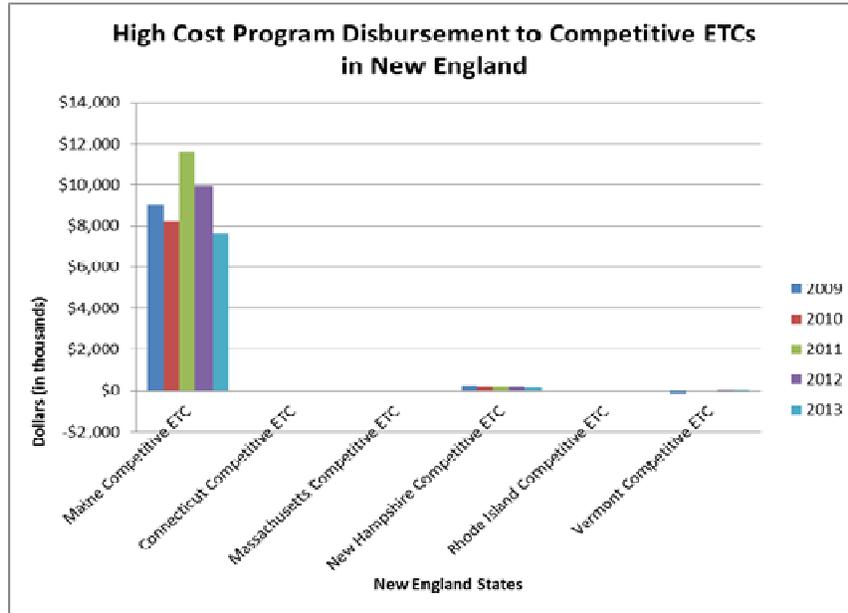
**Figure 3-24: Connect America Fund ICC in New England**

To date, Vermont has benefited more than other New England states from the Connect America Fund, both through the intercarrier compensation mechanism (Figure 3-24) and incremental support, for the latter of which FairPoint accepted over \$2 million in Round 1 funding for broadband buildout to 53 towns in the state in 2012 (Figure 3-25). During the same round, FairPoint was disbursed \$5,000 for buildout to 1 town in Maine. In Round 2, FairPoint accepted \$903,000 in 2013 for buildout to 44 towns in Maine.



**Figure 3-25: Connect America Fund Incremental Support in New England**

Vermont also stands to benefit more than other New England states from Phase I of the Mobility Fund. VTel Wireless was awarded over \$2 million for providing at least 3G service to unserved eligible areas in a twelve-county area. US Cellular was awarded \$1.4 million to serve three areas in Washington County, Maine, for which the company received a disbursement of \$473,000 in 2013. None of the New England states received funding under Mobility Fund Tribal Phase I.



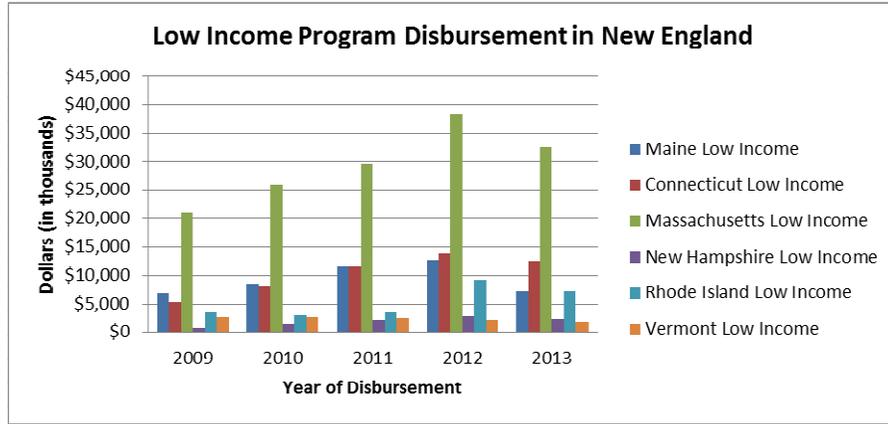
**Figure 3-26: High Cost Program Disbursement to Competitive ETCs in New England**

It is noteworthy that a larger percentage of Maine’s total High Cost disbursement is channeled through a wireless competitive carrier (US Cellular) than that of other New England states (Figure 3-26).

**3.2.2 Maine and New England Under the Low Income Program**

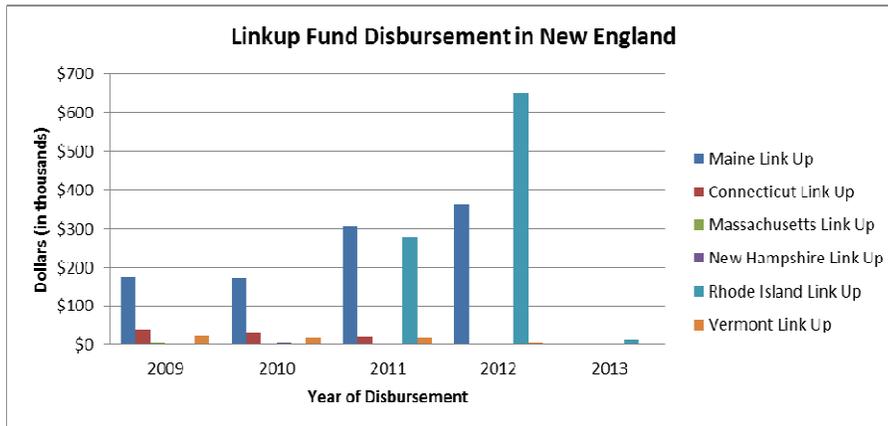
Massachusetts has received a significantly higher disbursement from the Low Income Program than Maine and other New England states (Figure 3-27). Although Maine has a higher percentage of population below poverty level (13.3%), Massachusetts has a significantly higher population (6.7 million as opposed to Maine’s 1.3 million), 329,174 of which subscribe to Lifeline as of 2013 (as opposed to Maine’s 70,851). Connecticut has 128,714 subscribers; Rhode Island, 69,470 subscribers, and Vermont, 16,036. Maine is the only state with Tribal subscribers (100).<sup>107</sup>

<sup>107</sup> USAC FCC filing LI08, 1Q2014.  
<http://www.usac.org/about/tools/fcc/filings/2014/q1.aspx>



**Figure 3-27: Low Income Disbursement in New England**

As Figure 3-27 shows, all New England states have experienced reduced funding under this program in 2013 due to the FCC’s reforms to eliminate duplicate subscriptions and Linkup, the mechanism supporting discounts for first connection. Maine and Rhode Island have been most affected by the elimination of funding under Linkup, although the other states have also lost funding (Figure 3-28).



**Figure 3-28: Linkup Fund Disbursement in New England**

Although the total amount of funding under the Low Income Program has been reduced, the percentage of funding through wireless competitive ETCs has increased dramatically in Maine and New England as it has nationally (Figure 3-29).

Massachusetts and Vermont were the only New England states that participated in the \$13.8 million Broadband Pilot Program in 2013 to collect information on how the Lifeline program could be structured to increase broadband adoption. Massachusetts was awarded funding (approximately \$2 million) for two wireless

projects and Vermont was awarded funding (approximately \$100,000) for 1 wireline project.<sup>108</sup>

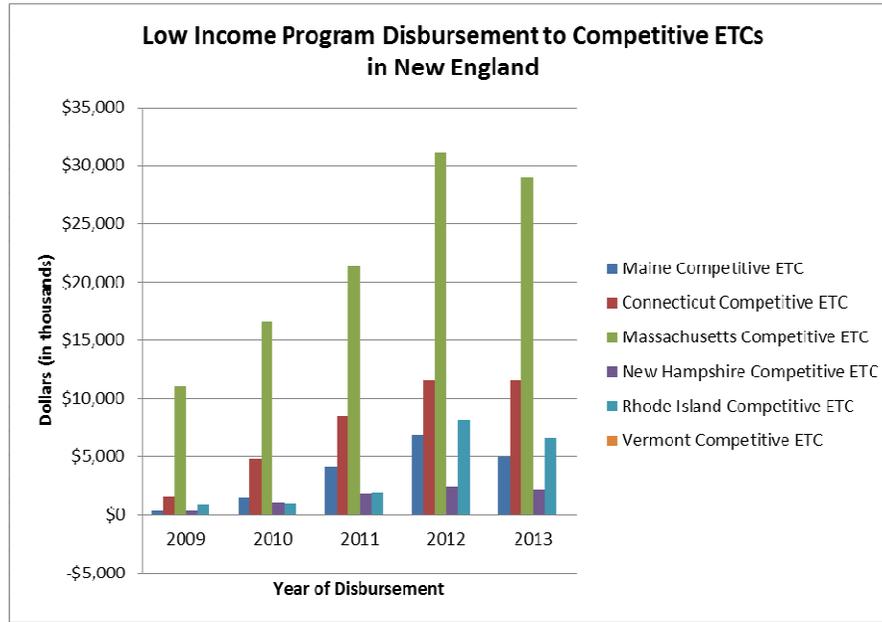


Figure 3-29: Low Income Program Disbursement to Competitive ETCs in New England

3.2.3 Maine and New England Under E-rate

Massachusetts has the highest E-rate disbursement of any of the New England states, with Connecticut in second place and Maine, third (Figures 3-30 and 3-31). An obvious influencing factor is the comparatively larger number of K-12 schools in Massachusetts and Connecticut (Table 3-7), as well as the larger amount of funding requests. Table 3-9 shows requests by state for Priority 1 services support in 2013.

Table 3-9: E-rate Commitments for Funding Year 2013

| State         | Applicants (#) | Funding Requests (#) | Committed Amount |
|---------------|----------------|----------------------|------------------|
| Massachusetts | 754            | 2,469                | \$29.5 million   |
| Connecticut   | 314            | 1,176                | \$20.0 million   |
| Rhode Island  | 167            | 388                  | \$9.7 million    |
| Maine         | 282            | 590                  | \$8.4 million    |
| Vermont       | 214            | 849                  | \$3.9 million    |
| New Hampshire | 150            | 477                  | \$3.8 million    |

<sup>108</sup> <http://www.fcc.gov/encyclopedia/low-income-broadband-pilot-program>

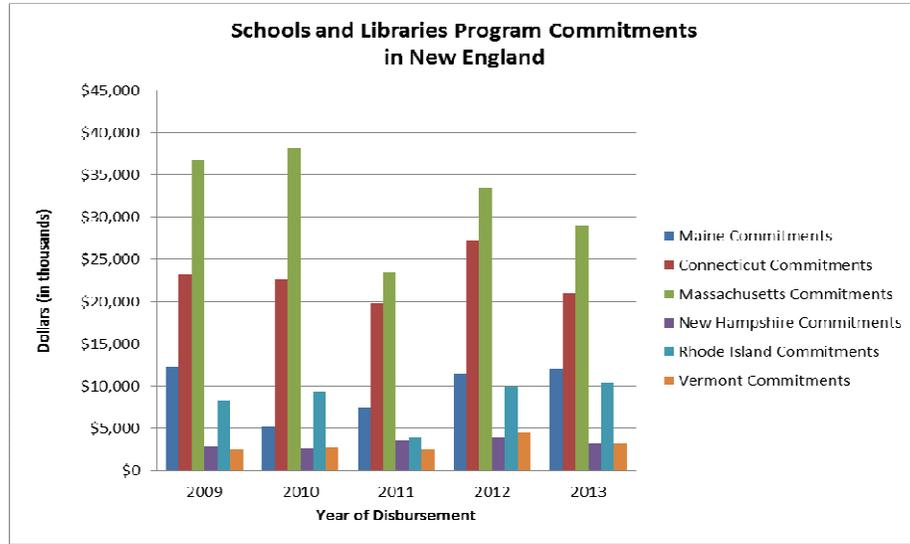


Figure 3-30: Schools and Libraries Program Commitments in New England

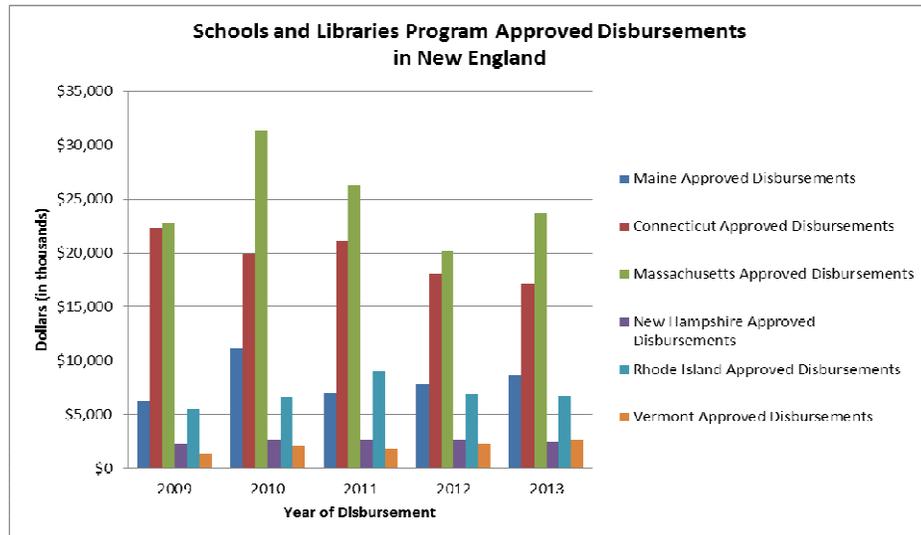


Figure 3-31: Schools and Libraries Program Disbursements in New England

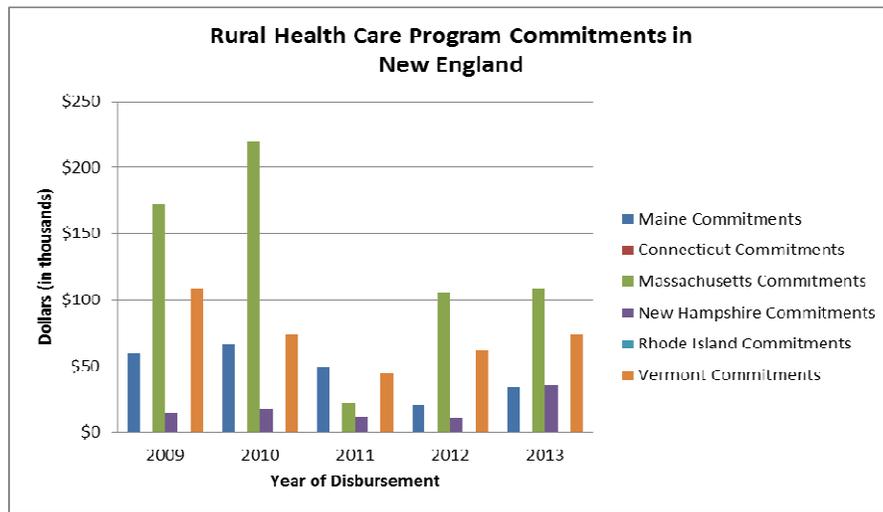
That low income plays a larger role in disbursement than ruralness is evident in the number of applications funded for schools and libraries in urban areas. In 2013, for example, twice as many applications were funded nationwide for urban schools and libraries (8,638) than for schools and libraries in rural areas (4,661), with four times as much support committed (\$184 million as opposed to \$46 million).<sup>109</sup>

<sup>109</sup> USAC Annual Report 2013. [http://www.usac.org/\\_res/documents/about/pdf/annual-reports/usac-annual-report-Interactive-Layout-2013.pdf](http://www.usac.org/_res/documents/about/pdf/annual-reports/usac-annual-report-Interactive-Layout-2013.pdf)

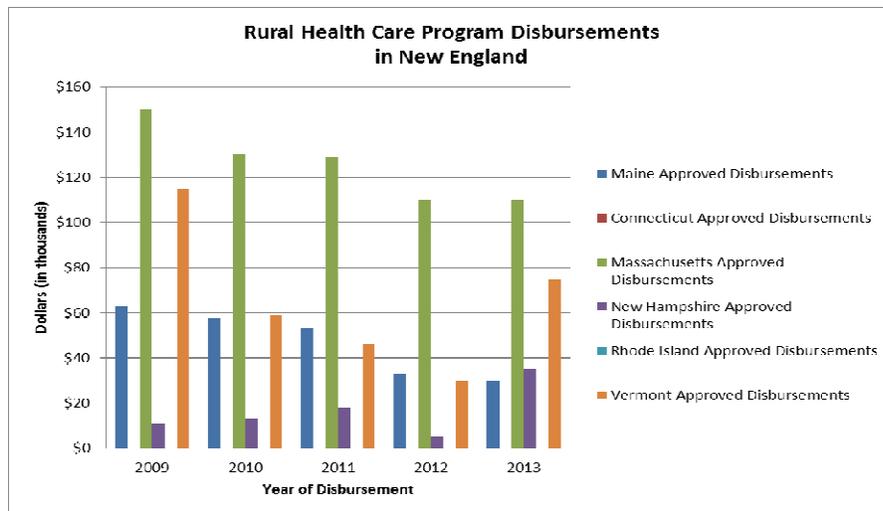
Maine, Massachusetts, Connecticut and Rhode Island all have educational networks that manage E-rate applications statewide. New Hampshire and Vermont have none. None of the New England states participated in the \$9 million Learning on the Go pilot program in 2011-2012 that funded 20 projects (19 schools, 1 library) to support 24x7 wireless internet access.

**3.2.4 Maine and New England Under the Rural Health Care Program**

Massachusetts and Vermont have received the most funding in the last five years under the Rural Health Care Program, which supports discounts for telecommunications and internet access services to rural healthcare facilities (Figures 3-32 and 3-33). A greater urban-rural differential resulting in higher amounts of funding may be an incentive factor in Massachusetts.



**Figure 3-32: Rural Health Care Program Commitments in New England**



**Figure 3-33: Rural Health Care Program Disbursements in New England**

According to USAC, Vermont has many more facilities participating in the program than Maine. Massachusetts, while having fewer participants in the program, has facilities that request greater and more expensive bandwidth. Connecticut and Rhode Island have had very low to no participation in this program during this time.

Maine has led New England in its participation in the Rural Health Care Pilot Program, established in 2006, showing how pilot projects can bring an infusion of one-time or temporary funding into the state. The two consortia—the Rural Western and Central Maine Broadband Initiative and the New England Telehealth Consortium, which covers Maine, New Hampshire and Vermont—have generated over \$5 million for implementing two broadband networks that currently connect over 100 not-for-profit healthcare facilities in Maine. Another \$11 million of pilot funds is allocated to connect additional sites in Maine and New England. Massachusetts, Connecticut and Rhode Island have not participated in this program.

### 3.3 IMPACTS OF PROGRAM REFORM—SUMMARY

Four years into the FCC’s modernization of the USF, Maine stakeholders are beginning to feel the impacts of reform. Major impacts are summarized below and in Table 3-10 according to program.

- *High Cost Program.* Maine rural incumbent carriers have begun to experience a loss in High Cost Program funding for copper-wired-based telephony operations and maintenance from legacy mechanisms, which have been frozen, capped, eliminated or redirected toward broadband access services. For FairPoint, Maine’s price cap carrier, and its local exchanges, this funding has been temporarily recovered through the transitional Frozen High Cost Fund, with the provision that an ever-increasing percentage be used for broadband buildout. The FCC plans to designate 100 percent of Frozen High Cost subsidies for broadband in 2015. Additional (incremental) funding is available for broadband buildout under the new Connect America Fund. FairPoint denied most of the funding for buildout in Maine under Round 1 of Phase I, as the specified carrier investment obligations were too high. In Round 2, the company accepted \$1.03 million in funding for buildout to 44 Maine towns. Given financial constraints, FairPoint envisions denying Phase II model-based support due to the cost of required investment,<sup>110</sup> opening the door to a wide range of entities, including nontraditional ETCs such as cable operators, satellite providers, and electric cooperatives.<sup>111</sup> In that event, it is likely that the FCC will segment FairPoint’s service territory and auction off the pieces for the lowest bid. As of the Omnibus Order, FairPoint will have

<sup>110</sup> <http://phx.corporate-ir.net/phoenix.zhtml?c=122010&p=irol-irhome>

<sup>111</sup> Under the provisions of the 10 June 2014 Omnibus Order, entities can participate in the competitive bidding in advance of their certification as an ETC by either the state or the FCC.

the option to participate in the competitive bidding process, enabling it to bid on specific areas of the state for some other level of support. If FairPoint takes this approach, however, it runs the risk of losing these areas, especially if desirable, to other entities in the bidding, or of winning the bid at a lower level of funding than it would have received through model-based support.

Rate of return carriers are experiencing loss from the reduction of legacy High Cost Program intercarrier compensation mechanisms. Some but hardly all of these cuts are offset by the Connect America ICC funding, provided carriers offer their customers broadband service with speeds of 4 Mbps down and 1 Mbps up upon their reasonable request. As of June 2014, the FCC has proposed to establish a Connect America Fund for rate of return carriers and is seeking comment on how to transition carriers to this new form of support. In the meantime, the uncertainty of the funding situation has led carriers to reduce network investments.

Under the new Mobility Fund, three areas of Washington County will have access to at least 3G mobile service from a \$1.4 million award to US Cellular. It is anticipated that Phase II of this fund will provide continued deployment and preservation of 4G LTE in areas that would not otherwise have such service, providing more opportunity for Maine.

- *Low Income Program.* Reforms to Lifeline support reduced Maine's subsidy for discounts on telecommunications to low income consumers by almost \$5 million from 2012 to 2013. The termination of Linkup for initial connection represented a loss of \$363,000 (2012) in annual support. Nevertheless, funding for low income support under Lifeline remains largely an untapped resource in Maine.
- *Schools and Libraries Program (E-rate).* The 2010 E-rate order allowed Maine schools and libraries to contract for dark fiber. Long-term transport contracts, however, have prevented these institutions from being able to leverage this new flexibility to any great extent. They expect significant competition in the next funding cycle due to the ability to lease fiber.<sup>112</sup> The FCC's support for ConnectED should create funding opportunities for capital projects for both fiber buildout and network equipment (WiFi) inside of Maine schools and libraries.

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<sup>112</sup> Interview with Jeff Letourneau, Executive Director, Networkmaine, 11-12 April 2014.

**Table 3-10. USF Reforms in Maine –At a Glance**

| Legacy Program                                                                                                                                                                                        | Reform                                                                                                                                                                                                    | Total Support Available                                       | Support to Maine                                                                                                                     | Eligibility/Requirements                                                                                                                                                                                                                                                                     | Impact on Maine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>High Cost (HC)</b><br>Support for telecommunications services in remote and rural areas high cost to serve                                                                                         | High Cost mechanisms reduced, eliminated, and/or redirected to broadband.                                                                                                                                 | \$4.2 billion (2013)                                          | \$28 million total (2012)<br>\$25 million total (2013)                                                                               |                                                                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>Legacy funding mechanisms are frozen, reduced, eliminated or redirected from telecommunications to broadband.</li> <li>Maine received \$3 million less of High Cost support in 2013 than in 2012; nearly \$5 million less than in 2011. As of 1Q2014, approximately \$1.3 million loss is to rate of return carriers; \$3.7 million less to competitive carrier—US Cellular.</li> <li>In climate of uncertainty, rate of return carriers are reducing planned network investments.</li> </ul> |
| <ul style="list-style-type: none"> <li>High Cost Loop</li> <li>High Cost Model</li> <li>Interstate Access Support</li> <li>Interstate Common Line Support</li> <li>Local Switching Support</li> </ul> | <b>Frozen High Cost</b><br>Support frozen under High Cost mechanisms at 2011 level.                                                                                                                       | \$4.5 billion (2012)<br>\$1.7 billion (2013)                  | \$17.8 million; \$9.6 million under mechanisms not frozen (2012)<br>\$15.6 million; \$5.9 million under mechanisms not frozen (2013) | Carriers must use 1/3 of frozen support in 2013 to build/operate broadband-capable networks for serving areas unserved by unsubsidized competitor; 2/3 in 2014; and 100% in 2015.                                                                                                            | <ul style="list-style-type: none"> <li>FairPoint unable to meet obligation; requests limited waiver of FCC rules for 2013 to repurpose frozen CAF I support corresponding to reduced support from HC subprograms. FCC releases order that clarifies that price cap carriers can use frozen support to recover costs of past network upgrades to extend broadband-capable networks, to maintain and operate existing networks, or both.</li> </ul>                                                                                    |
|                                                                                                                                                                                                       | <b>Connect America Fund (CAF)</b><br>Support for wireless and wireline broadband providers in unserved and underserved areas                                                                              | \$330 million (2012)                                          | \$3.3 million: \$903,000 in incremental support, \$2.4 million in ICC (2013)                                                         |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>CAF Phase I, Round 1</li> </ul>                                                                                                                                    | \$300 million available;<br>\$115 accepted (2012)             | \$5,000 disbursed (2012)                                                                                                             | Carriers must deploy broadband at least 4 Mbps down/1 Mbps up and offer service to 1 location unserved by an unsubsidized competitor for every \$775 in support                                                                                                                              | <ul style="list-style-type: none"> <li>FairPoint accepted \$2 million out of \$4.8 million offered for buildout of 53 Vermont towns, 1 Maine town (South China). Required investment too high to accept full support.</li> </ul>                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>CAF Phase I, Round 2</li> </ul>                                                                                                                                    | \$485 million available;<br>\$255.7 million authorized (2013) | \$1.03 million accepted;<br>\$903,000 disbursed (2013)                                                                               | Carriers must match support with own private investment to complete network upgrades in 3 years.                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>FairPoint accepted \$1.03 million to support buildout for 44 ME towns.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Rural Broadband Experiments<br/>Test of competitive bidding process for deploying broadband networks to high-cost areas</li> </ul>                                 | TBD                                                           |                                                                                                                                      | Expressions of interest solicited from wide range of institutions. Formal proposal process to follow.                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>18 Maine entities, including telecommunications carriers, service providers, schools/libraries, and municipalities in Maine submitted EOIs, requesting from \$144 to \$176 million.</li> </ul>                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>CAF Phase II<br/>Monthly support for voice (VOIP)/broadband networks only in high-cost areas, calculated using cost model to estimate cost to locations</li> </ul> | \$1.8 billion per year for 5 yrs.                             |                                                                                                                                      | Carriers must serve specified areas currently not served by unsubsidized competitor with interim buildout requirements in 3 years. If support not accepted, support will be determined through competitive bidding. FCC considering doubling required download speed from 4 Mbps to 10 Mbps. | <ul style="list-style-type: none"> <li>Some expectation that FairPoint will not accept available funding because required investment too high, opening the field to competition, including non-traditional ETCs, such as cable operators, satellite providers, and electric cooperatives.</li> </ul>                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                       | <b>Mobility Fund</b><br>Support to deploy/maintain mobile broadband/voice in high cost areas                                                                                                              |                                                               |                                                                                                                                      |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Mobility Phase I<br/>Support to populated census blocks unserved by 3G</li> </ul>                                                                                  | \$300 million                                                 | \$1.4 million committed (2012);<br>\$473,000 approved disbursement (2013)                                                            | Carriers must deploy 4G within 3 years or 3G within 2 years to accelerate migration to 4G.                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>US Cellular awarded \$1.4 million to support mobile buildout for 3 areas in Washington County (2012).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Tribal Phase I<br/>Support to populated census blocks unserved by 3G</li> </ul>                                                                                    | \$50 million                                                  |                                                                                                                                      | Carriers must deploy 4G within 3 years or 3G within 2 years to accelerate migration to 4G.                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>Maine did not participate as Tribal areas already had at least 3G.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Mobility Phase II<br/>Support to deploy/maintain mobile broadband/voice in high cost areas</li> </ul>                                                              | \$500 million annually                                        |                                                                                                                                      | Eligibility TBD. Mobile broadband (4G LTE) and voice service in high cost areas.                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                       | <b>Remote Areas Fund</b><br>Funding for price cap/rate of return carriers to serve extremely high cost areas not receiving CAF II support.                                                                | TBD                                                           |                                                                                                                                      | Extremely high cost areas not eligible for CAF II model-based support are eligible for CAF II competitive bidding and Remote Areas Fund support (less than 1 percent of US population). Full implementation of Remote Areas Fund in 2016.                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**Table 3-10. USF Reforms in Maine –At a Glance**

| Legacy Program                                                                                                                                       | Reform                                                                                                                                                                                                          | Total Support Available                                                              | Support to Maine                                                                                                                                                    | Objectives/Requirements                                                                                                                                                                                   | Impact on Maine                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Low Income (Lifeline)</b><br>Support for low-income residential consumers through carrier discounts                                               | <b>Low Income (Lifeline)</b><br>Linkup for initial telephone connection phased out; discounts for internet connection. 1-per-household rule; \$9.25 cap/month; \$25 for Tribal land households                  | \$2.2 billion (2012); \$1.8 billion (2013)                                           | \$12 million; \$7.2 million (2013)                                                                                                                                  | Carriers provide discounts for monthly charges on wireless/wireline connections to low-income consumers (135% of federal poverty guidelines)                                                              | <ul style="list-style-type: none"> <li>Loss of \$363,000 (2012) in Linkup support annually to telecommunications carriers.</li> <li>Lifeline support reduced to \$7.2 million (2013) from \$12.4 million (2012).</li> <li>Increase in funding through competitive wireless carriers.</li> </ul> |
|                                                                                                                                                      | <b>Broadband Adoption Program</b><br>Study to evaluate support to low-income customers in accessing broadband networks                                                                                          | \$13.8 million (awarded 2012)                                                        |                                                                                                                                                                     | Most selected carriers are obligated to provide 4 Mbps download/1 Mbps upload or at least 3 G service                                                                                                     | <ul style="list-style-type: none"> <li>14 pilot projects selected nationwide. Maine did not participate.</li> </ul>                                                                                                                                                                             |
| <b>Schools and Libraries (E-rate)</b><br>Support for affordable telecommunications and internet access services to K-12 schools and public libraries |                                                                                                                                                                                                                 | \$2.25 billion capped (2012)                                                         | \$8 million (2012)<br>\$8.7 million (2013)                                                                                                                          | Carriers provide discounts to K-12 schools and libraries for telecommunications and internet access services. Funding goes first to support Priority 1 services (telecommunications and internet access). | <ul style="list-style-type: none"> <li>Limited to no Priority 2 service support (internal infrastructure buildout and maintenance), bringing broadband connection into schools and libraries</li> </ul>                                                                                         |
|                                                                                                                                                      | <b>Learning on the Go Pilot Program</b><br>Study on pros/cons of wireless off premises connectivity                                                                                                             | \$9 million                                                                          |                                                                                                                                                                     |                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>20 schools/libraries awarded support. Maine did not participate.</li> </ul>                                                                                                                                                                              |
|                                                                                                                                                      | <b>E-rate 2.0 &amp; ConnectED</b><br>Support for access to higher-speed broadband, increasing focus on connectivity inside classroom. Additional corporate support in the form of donated products and services | \$1-\$2 billion from E-rate over 2 years; \$1 billion in donations from corporations |                                                                                                                                                                     |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                      | <ul style="list-style-type: none"> <li>Demo program (proposed)</li> </ul>                                                                                                                                       | TBD                                                                                  |                                                                                                                                                                     |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                 |
| <b>Rural Health Care</b><br>Support for telecommunications and internet access services for rural healthcare providers                               |                                                                                                                                                                                                                 | \$400 million capped; \$155 million (2012)                                           | \$847,000 (2012)                                                                                                                                                    | Carriers provide discounts to public and not-for-profit healthcare providers in rural communities.                                                                                                        |                                                                                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>Telecommunications Program Support for telecommunications services</li> </ul>                                 | <ul style="list-style-type: none"> <li>Phase out of internet access services</li> <li>Telecommunications Program</li> </ul>                                                                                     |                                                                                      |                                                                                                                                                                     | Carriers provide services to rural and non-profit healthcare providers at rates comparable to those in urban areas                                                                                        |                                                                                                                                                                                                                                                                                                 |
|                                                                                                                                                      | <b>Rural Health Care Pilot Program</b><br>Support for statewide/regional healthcare broadband networks—85% of eligible costs                                                                                    | \$417 million over 3 years; \$139 million per year                                   | \$16 million committed; \$814,000 approved disbursements (2012)<br>\$14 million committed; \$5.8 million approved disbursement (2013); \$30,000 to telecom projects |                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>2 consortia networks implemented in Maine and New England: Rural Western and Central Maine Broadband Initiative &amp; New England Telehealth Consortium (\$5.8 million in 2013)</li> <li>Administrative costs are not supported.</li> </ul>              |
|                                                                                                                                                      | <b>Healthcare Connect</b><br>Support for expanding broadband to rural areas and for broadband networks—65% discount                                                                                             |                                                                                      |                                                                                                                                                                     | Focus on smaller healthcare providers by capping nonrural hospitals at \$30,000 per year (for recurring charges) and \$70,000 over 5-year period (for non-recurring charges)                              | <ul style="list-style-type: none"> <li>FCC is accepting applications (2013-2014).</li> </ul>                                                                                                                                                                                                    |
|                                                                                                                                                      | <b>Skilled Nursing Facilities Pilot</b><br>Test economic feasibility of including broadband connectivity to skilled nursing facilities in Healthcare Connect                                                    | TBD                                                                                  |                                                                                                                                                                     | Deferred until after CAF Experiments, the eligibility for which includes healthcare facilities                                                                                                            |                                                                                                                                                                                                                                                                                                 |

- *Rural Health Care Program.* The impacts of Rural Health Care Program reforms on beneficiaries in Maine are essentially positive, as changes to the legacy program add to rather than subtract from the support already provided. The addition of the Rural Health Care Pilot Program—an antecedent to the new Healthcare Connect Fund—has made the biggest impact. Two rural healthcare consortia headquartered in Maine have received a total of \$6.6 million in funding for designing and implementing broadband networks that connect primarily not-for-profit healthcare facilities in Maine and in Maine, New Hampshire and Vermont.

### 3.4 MAINE'S RESOURCE GAP

To assess the potential gap in Maine's resources created by USF reforms and to develop mitigating strategies, it is useful to review Maine's positioning as an USF recipient—its strengths, weaknesses, opportunities and threats (SWOT) as follows.

#### 3.4.1 SWOT Analysis

##### **Strengths:**

- High eligibility for USF support, given Maine's ruralness, low income and Tribal populations. Maine has received as much or more funding from the USF than have other New England states, with the exception of Massachusetts, and more net benefit annually (funding in excess of contribution).
- Supplementary state funds that complement federal support, including the Maine Universal Service Fund (MUSF), the Maine Telecommunications Education Access Fund (MTEAF), the Broadband Sustainability Fund, and the ConnectME Authority Grant Fund Program, which has provided \$9 million in funding for over 110 infrastructure buildout projects, potentially serving 37,000 households and businesses in unserved areas of Maine.
- A centralized, independent State agency—the ConnectME Authority—dedicated to broadband development programs (technical assistance and capacity building), broadband information dissemination, and funding for broadband infrastructure development in unserved and underserved geographic areas and consortia network projects, including health care. The Authority is now driving the statewide federally funded FirstNet public safety network effort. Building the network, which will be open to secondary use, will further advance broadband development in Maine.<sup>113</sup>

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<sup>113</sup> FirstNet, an agency created within the NTIA to ensure the establishment of the first nationwide interoperable public safety network, has awarded Maine a million dollar grant for planning the statewide implementation of the network. FirstNet's deployment strategy is to combine terrestrial systems with the use of mobile and satellite systems.

- Effective schools and library networking through the Maine Schools and Library Network (MSLN), a University of Maine System–led consortium of most Maine schools and libraries managing the centralized, coordinated effort behind E-rate funding.
- Aggressive, grass-roots broadband healthcare initiatives, including two successful Rural Health Care Pilot programs. Other healthcare consortia efforts are under way in the state, including one by the Maine Department of Health and Human Services.
- Active Broadband Infrastructure Deployment Working Group (Dig Once) to identify technical, legal funding and jurisdictional challenges to broadband infrastructure in Maine and to develop solutions to achieve and facilitate the deployment of this infrastructure.<sup>114</sup>
- Shrinking percentage of unserved areas. 93.1 percent of street locations in Maine have access to broadband at speeds of 768 kbps or above.<sup>115</sup>
- Involvement of multiple entities in the Connect America Rural Broadband Development Experiments, which will establish bidding mechanisms and funding amount for Connect America Fund Phase II.
- Other successful funding initiatives, such as the acquisition of a \$2.5 million USDA Distance Learning and Telemedicine grant for equipment to deliver science, technology, engineering and mathematics programs to remote Maine island and coastal communities.<sup>116</sup>
- Maine State leadership support for broadband development, including that of US Senator Angus King and Wayne Jortner, Senior Counsel, Maine Office of the Public Advocate, and Treasurer, USAC Board of Directors; and state-level impetus to understand USF rule changes and to evaluate and mitigate impacts.
- Availability of 1,100-mile high-capacity fiber optic network—the federally funded 3 Ring Binder Project, dark-fiber asset built and leased by Maine Fiber Company.

**Weaknesses:**

- One wireline price cap carrier (ILEC) through which a significant amount of High Cost support funnels for maintaining the dominant copper-wire

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[http://www.ntia.doc.gov/files/ntia/publications/firstnet\\_program\\_roadmap\\_executive\\_summary\\_03112014.pdf](http://www.ntia.doc.gov/files/ntia/publications/firstnet_program_roadmap_executive_summary_03112014.pdf)

<sup>114</sup><http://www.maine.gov/connectme/digonce/docs/Dig%20Once%20Workgroup%20Report%201-31-14%20Final.pdf>

<sup>115</sup> *Developing Broadband in Maine: Baseline Update 2013.*

[http://www.maine.gov/connectme/grants/ntia/docs/2013\\_BaselineUpdate.pdf](http://www.maine.gov/connectme/grants/ntia/docs/2013_BaselineUpdate.pdf)

<sup>116</sup> [http://www.mainebiz.biz/article/20140508/NEWS0101/140509958/maine-gets-\\$25m-for-telemedicine-programs](http://www.mainebiz.biz/article/20140508/NEWS0101/140509958/maine-gets-$25m-for-telemedicine-programs)

network in Maine. FairPoint is losing universal funding support for its network operations and maintenance and may not accept Connect America Phase II funding due to the spend obligations for broadband buildout investment.

- Rate of return carrier dependence on funding, which is significantly less due to reforms. Carriers have experienced cuts in High Cost support for maintaining copper wire networks and no additional or compensatory support for broadband investment.
- Necessity for carrier services to focus on economic clusters of population with greater return on investment, rather than high cost areas.
- Predominance of broadband DSL over copper, with a limited amount of buildout of fiber, both fiber to the premise or house and infrastructure buildout within schools and libraries.
- Diluted service quality standards for copper-wire network maintenance.
- Unserved areas that are extremely high cost to serve, including remote, insular areas, areas of difficult terrain; many underserved areas. Extremely high cost areas in Maine are part of the 1 percent that Connect America Phase II funding may not support.
- Unserved and underserved speed definitions in state, which are still low, need to be comparable with the FCC, particularly as FCC has proposed raising the definition of unserved from 4 Mbps to 10 Mbps.
- Lack of integrated, policy-based investment support for ubiquitous broadband. Maine's simultaneous, disconnected, and grass roots efforts in broadband infrastructure buildout (wireline and wireless) lose the cost advantages of combined effort and shared resources.
- MTEAF supplementary support shrinking as is telecommunications companies intrastate revenue, on which the fund is based, making another source of local contribution for E-rate funding necessary.
- Low broadband ranking in state, indicating a lack of investment relative to other states. According to the 2012 State New Economy Index, Maine ranks 37<sup>th</sup> in the deployment of broadband; according to the Ookla New Index, Maine ranks 51<sup>st</sup> in average household broadband download speeds (14.36 Mbps) and 49<sup>th</sup> in average household upload speeds (3.28 Mbps).<sup>117</sup>

**Opportunities:**

- Under leadership of the ConnectME Authority, Maine well positioned to develop statewide vision, policy and integrated financial support for ubiquitous broadband.

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<sup>117</sup> <http://www.itif.org/publications/2012-state-new-economy-index;>  
<http://www.netindex.com/download/2,1/United-States/>

- Maine well positioned to take advantage of existing and future USF programs:
  - Use of USF pilot projects critical. Pilot projects provide the opportunity for additional one-time funding to support broadband infrastructure rollout for unserved and underserved areas and specific social, healthcare and educational initiatives.
  - Connect America Fund (CAF) Programs:
    - Proposal period of Broadband Rural Development Experiments, May-June 2014.
    - Rollout of Connect America Fund Phase II-- Connect America Cost Model (CACM), 2014.
    - Proposed \$10 million in one-time funding to rate of return carriers for middle-mile projects on Tribal lands in 2015
    - Rollout of CAF Remote Areas Fund, 2016.
    - Rollout of Mobility Fund Phase II to mobile providers, TBD.
    - Rollout of Mobility Fund Tribal Phase II, TBD.
  - Additional Lifeline subscriptions. With no cap on this program, the number of subscriptions in Maine can be raised substantially.
  - Rollout of E-rate 2.0 with support for ConnectED (changes in application process, prioritizing investments in faster connections; more focus on Priority 1 investments), TBD.
    - Potential demonstration projects
    - Public-private initiatives—corporate donations
  - Opportunities with Rural Health Care programs:
    - Growth of New England Telehealth Consortium. New facilities can be added to existing network.
    - Funding under Rural Health Care Program and Healthcare Connect Fund. The new fund will support internet access services and new network consortia buildout in 2015.
    - Skilled Nursing Facilities Pilot Program. This program may become part of Rural Broadband Experiments or CAF Phase II.

**Threats:**

- Diminishing frozen support to Maine ILECs.
- Level of intercarrier compensation payments received by Maine ILECs diminishing. Traditional ICC revenues are declining with transition to bill and keep.
- Elimination of High Cost HCM, IAS, ICLS funding a significant loss to rural carriers. Funding will be cut regardless of actual costs incurred. The ability

to manage capital and operating costs, invest in new infrastructure, and maintain high quality service will be increasingly compromised.<sup>118</sup>

- ILEC contribution requirements of High Cost reforms outweighing benefits of support, discouraging investment in low-profit, high cost areas.
- Rejection of Connect America Phase II funding leading to FCC reverse auction process that awards subsidies to non-traditional carriers, increasing competition. Non-traditional providers, cable operators, satellite providers, electric cooperatives will be eligible for support.
- Loss of High Cost funding to maintain copper-based network for both telecommunications and broadband DSL. Carriers' ability to provide high-quality service will be compromised.
- Extremely high cost areas in Maine—those outside of the Connect America Fund Phase II model threshold—potentially limited in the funding they need for basic broadband buildout. Many Maine locations will be eligible only for support through CAF II competitive bidding or the much smaller Remote Areas Fund.
- Loss of Linkup funding (discounts for connection) to rural carriers; wireless CLECs have 80 percent of Lifeline support funding (2Q2013).
- No additional federal funding for ConnectED planned to meet five-year goal; limited Priority 2 availability (internal connections, maintenance).
- Hidden costs of funding opportunities—particularly administrative, which the Rural Health Care pilots have demonstrated—amounting in one example to \$400,000 annually.
- Lack of integrated policy-based investment support in ubiquitous broadband, particularly in the highest cost to serve areas, creating an opportunity loss in economic growth and other gains.
- Lack of coordination of broadband efforts statewide increasing total cost of broadband buildout. There is no one statewide plan for 100 percent access.

### 3.4.2 The Gap

Given Maine's positioning as an USF recipient, specifically the weaknesses and risks as outlined above, the impacts of USF reform are likely to create a gap in Maine resources as follows:

- Lack of funding to operate and maintain the copper-based network that provides the majority of Maine's broadband and telephone service, due to the loss in High Cost funding to both the dominant and smaller carriers, can lead to a disruption in services and a reduction in service quality.

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<sup>118</sup> [www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/Documents/universal-service-brochure.pdf](http://www.kpmg.com/US/en/IssuesAndInsights/ArticlesPublications/Documents/universal-service-brochure.pdf)

- Lack of funding to invest in broadband buildout, particularly at higher speeds (10 Mbps or 25 Mbps), leads to loss in economic, educational, social and healthcare-related gains from buildout.
- Carrier focus on higher return on investment, leaving gap in service to highest cost areas, also leads to opportunity loss. Extremely high cost areas (identified as 1 percent nationwide, a higher percentage in Maine) may be funded only under CAF II competitive bidding or the much smaller Remote Areas Fund.
- Lack of local contribution to the E-rate program limits eligibility for and amount of federal support available.
- Gap in ConnectED benefits to the 1 percent of students will result in limited ConnectED support for students learning in Maine island schools and libraries.
- Gap in broadband infrastructure connections within Maine schools and libraries due to limited support for E-rate Priority 2 services limits use of innovative digital learning tools.
- Gap in policy-based coordination and financing of broadband efforts slows development, costs more and creates opportunity loss in potential economic growth and other gains.

## 4.0 Strategic Recommendations

The following recommendations, which are based on the findings of this report, are designed to assist the Authority in developing strategies to address the challenges and pursue the opportunities of USF reform, as part of its mission to facilitate the universal availability of broadband in Maine.

1. Identify and encourage pursuing untapped existing and new opportunities for USF funding, particularly pilot programs. Understand individual USF program opportunities and monitor program transformations and opportunities that meet needs of different stakeholder groups, including educational and healthcare providers. Encourage marketing of Lifeline program to provide more citizens below poverty level with discounts on telecommunications services. This program will transition into support for broadband connection. Act as a clearinghouse of information on USF and other complementary opportunities, encouraging aggressive and informed efforts to secure funding, working in collaboration with Wayne Jortner, Senior Counsel, Maine Office of the Public Advocate, and Treasurer, USAC Board of Directors.

Maine's participation in USF pilot projects not only brings in an infusion of revenue for specific initiatives but helps to determine the objectives, requirements and funding size of the full programs that follow, which is particularly important given Maine's unique profile and needs.

2. In collaboration with the MPUC and the State Legislature, encourage the employment of Maine USF mechanisms to support a redefined concept of universal service as fiber optic buildout that replaces copper plant, rather than supporting voice provider of last resort (POLR) services, which will be obsolete. Advocate for the expansion or redirection of MUSF support to fund open access fiber optic last mile, creating a broadband market with structural separation, that is, a market with retail service offerings separate from the network infrastructure.

Structural separation with open access will allow the leveraging of one fiber plant by multiple retail service providers to deliver voice, video and internet. A

transitional measure would be adding an additional fund to support fiber optic last mile buildout to the existing mechanism.

3. Encourage state and regulatory support for new business arrangements (consolidations, partnerships, service bundling, diversification) for local rural carriers to target funding and develop products that meet USF-supported speeds. Encourage carriers to step into the gap—become broadband service providers.
4. Raise the definition of unserved on an annual basis, particularly given that the FCC has proposed raising its broadband download speed definition to at least 10 Mbps (potentially 25 Mbps). Consider defining mobile as broadband. Mobility Phase II support is likely to target continued deployment and preservation of 4G LTE mobile broadband service.<sup>119</sup> Continue to inventory speeds in Maine through current and complete mapping, including developing new more granular, address-level mapping indicating speed levels (and costs).
5. Encourage coordinated broadband efforts to save costs, as well as individual, the latter of which can help address the gap in adoption. Help coordinate efforts of complementary public- and private-sector programs to share and maximize benefits. Continue to support healthcare consortia.
6. As the definition of the USF program continues to progress from ubiquitous phone service to a focus on broadband services in general, advance the dialog on and contribute to creating definitions for those provider entities and their customers who will contribute to the new fund (revenue) and those who will be qualified recipients of the benefits based on that new model.

It is significant that the FCC's 2011 Order is not based on statutory provisions of the Communications Act of 1934, as amended by the Telecommunications Act of 1996, which specifies that only eligible telecommunications carriers may receive universal service support, limiting support to entities engaged in providing telecommunications services and potentially excluding services such as broadband. The FCC has not in fact defined broadband either as a telecommunications service or as a universal service eligible for support. Instead the 2011 Order is based on the National Broadband Plan initiative to increase broadband network access in rural America. Although the Order

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<sup>119</sup> [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2014/db0610/FCC-14-54A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0610/FCC-14-54A1.pdf)

includes universal broadband as an objective of universal service, it does not address how under the statute to include broadband as a universal service.<sup>120</sup> Further, those entities required to contribute to the fund are limited to telecommunications carriers, paging service companies, and certain VoIP providers. As the fund is increasingly used to pay for broadband, and the range of ETCs is broadened to include entities other than telecommunications carriers, these limitations, and the statute on which they are based, will need to be addressed, both on the federal and the state level. Given that this issue may be politicized, US Senator Angus King, as an Independent, has the potential to play a key and effective role for Maine in this effort.

7. Take the lead in developing Maine State policy for ubiquitous broadband, as outlined in State statute,<sup>121</sup> integrating the above recommendations and the recommendations of the Maine Broadband Strategic Plan.<sup>122</sup>

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<sup>120</sup> Harold Furchtgott-Roth and Kathleen Wallman explore this and related issues in “A Framework to Assess the FCC’s 2011 Report and Order on Universal Service and Intercarrier Compensation. <https://prodnet.www.neca.org/publicationsdocs/wwwpdf/12213rba2.pdf>

<sup>121</sup> MRSA 35-A §9202-A. <http://www.mainelegislature.org/legis/statutes/35-a/title35-Asec9202-A.html>

<sup>122</sup> <http://www.maine.gov/connectme/grants/ntia/docs/ConnectMEStrategicPlanFinal.pdf>

## 5.0 Resources

This section provides information on additional funding sources that can be used to supplement USF support. It also lists resources for further research on the USF and its programs.

### 5.1 ADDITIONAL FUNDING SOURCES

Table 5-1 shows federal, state and private programs that have funding available for infrastructure buildout, high cost rural development, low income populations, schools and libraries, rural health care facilities, and emergency response.

**Table 5-1: Additional and Complementary Funding Resources**

| Additional and Complementary Funding Resources |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Target Area                                    | Type    | Program Name/Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Infrastructure buildout                        | Federal | <ul style="list-style-type: none"> <li>• <b>USDA RUS Rural Broadband Access Loan and Loan Guarantee Program</b><br/>Funding for the costs of construction, improvement and acquisition of facilities and equipment for broadband service in eligible rural communities.<br/><a href="http://www.rurdev.usda.gov/RUSTelecomPrograms.html">http://www.rurdev.usda.gov/RUSTelecomPrograms.html</a></li> <li>• <b>FirstNet</b><br/>Funding for development of first nationwide interoperable public safety network, open for secondary uses. <a href="http://www.firstnet.gov/">http://www.firstnet.gov/</a></li> <li>• <b>Northern Border Regional Commission</b><br/>Stimulus funding for distressed portions of the Northern Forest region of Maine, New Hampshire, Vermont and New York to support shovel-ready projects in broadband and other infrastructure buildout.<br/><a href="http://www.northernforest.org/northern_border_regional_commission_nbrc_.html">http://www.northernforest.org/northern_border_regional_commission_nbrc_.html</a></li> </ul> |
|                                                | State   | <ul style="list-style-type: none"> <li>• <b>Broadband Infrastructure Working Group—Dig Once</b><br/>Initiatives to achieve and facilitate deployment of broadband infrastructure.<br/><a href="http://www.maine.gov/connectme/digonce/index.shtml">http://www.maine.gov/connectme/digonce/index.shtml</a></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                | Private | <ul style="list-style-type: none"> <li>• <b>Google Fiber Community Connections</b><br/>Grants to create one gigabit-per-second networks in a few selected communities.<br/><a href="https://fiber.google.com/about/communityconnections/">https://fiber.google.com/about/communityconnections/</a></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| High-cost/rural development                    | Federal | <ul style="list-style-type: none"> <li>• <b>USDA Rural Utilities Service (RUS) Broadband Initiatives Program (BIP)</b><br/>USDA rural development grants. <a href="http://www.rurdev.usda.gov/UTP_BIPResources.html">http://www.rurdev.usda.gov/UTP_BIPResources.html</a></li> <li>• <b>USDA RUS Community Connect</b><br/>Broadband grants to rural communities where broadband service is least likely available. Funds may be used to build infrastructure and establish a community center offering free broadband access. Grants available to public entities, nonprofits, and tribes.<br/><a href="http://www.rurdev.usda.gov/utp_commconnect.html">http://www.rurdev.usda.gov/utp_commconnect.html</a></li> </ul>                                                                                                                                                                                                                                                                                                                                        |

| Additional and Complementary Funding Resources |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Target Area                                    | Type    | Program Name/Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| High-cost/rural development                    | Federal | <p><b>USDA RUS Rural Broadband Access Loan and Loan Guarantee Program</b><br/>Funding for the costs of construction, improvement and acquisition of facilities and equipment for broadband service in eligible rural communities. <a href="http://www.rurdev.usda.gov/RUSTelecomPrograms.html">http://www.rurdev.usda.gov/RUSTelecomPrograms.html</a></p> <ul style="list-style-type: none"> <li>• <b>USDA RUS Community Facility Grants</b><br/>Funds to assist in development of essential community facilities in rural areas and towns of up to 20,000 in population. Public entities, nonprofits, tribes are eligible. <a href="http://www.rurdev.usda.gov/hcf_cf.html">http://www.rurdev.usda.gov/hcf_cf.html</a></li> </ul>                                                                                                         |
|                                                | State   | <ul style="list-style-type: none"> <li>• <b>ConnectME Authority Grant Fund</b><br/>Funding for broadband infrastructure projects in unserved and underserved areas of Maine. <a href="http://maine.gov/connectme/grants/index.shtml">http://maine.gov/connectme/grants/index.shtml</a></li> <li>• <b>Broadband Sustainability Fund</b><br/>Support for incumbent carriers in the deployment of broadband infrastructure in unserved areas within their territories. <a href="http://maine.gov/connectme/grants/index.shtml">http://maine.gov/connectme/grants/index.shtml</a></li> <li>• <b>Maine USF</b><br/>Support for universal statewide access to telecommunications services. <a href="http://www.r-l-s-a.com/Maine/USF.htm">http://www.r-l-s-a.com/Maine/USF.htm</a></li> </ul>                                                    |
| Low income                                     | Private | <ul style="list-style-type: none"> <li>• <b>Connect to Compete</b><br/>National private- nonprofit sector partnership created to increase broadband adoption and digital literacy training in disadvantaged communities, helping residents improve outcomes in education, health, employment through broadband and technology solutions. <a href="http://www.everyoneon.org/c2c/">http://www.everyoneon.org/c2c/</a></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                            |
| Schools & libraries                            |         | <ul style="list-style-type: none"> <li>• <b>USDA Distance Learning and Telemedicine Loan and Grant Program (DLT)</b><br/>Loans, grants and loan/grant combinations to entities providing education or medical care to rural consumers through telecommunications. Grants awarded annually in competitive process after NOFA; loans and loan/grant combos noncompetitive and accepted year-round. <a href="http://www.rurdev.usda.gov/utp_dlt.html">http://www.rurdev.usda.gov/utp_dlt.html</a></li> </ul>                                                                                                                                                                                                                                                                                                                                  |
|                                                | State   | <ul style="list-style-type: none"> <li>• <b>Maine Telecommunications Education Access Fund (MTEAF)</b><br/>Support to Maine schools and libraries for telecommunications and internet access services. <a href="http://www.r-l-s-a.com/Maine/TEAFConnectME.htm">http://www.r-l-s-a.com/Maine/TEAFConnectME.htm</a></li> <li>• <b>Broadband Technical Assistance Project/Community Connection</b><br/>Broadband technical assistance and training to Maine citizens across the state. <a href="http://www.maine.gov/connectme/grants/ntia/technicalassistance.shtml">http://www.maine.gov/connectme/grants/ntia/technicalassistance.shtml</a>; <a href="https://sites.google.com/site/martilearns/community-connection">https://sites.google.com/site/martilearns/community-connection</a></li> </ul>                                       |
|                                                | Private | <ul style="list-style-type: none"> <li>• <b>Education Superhighway</b><br/>Nonprofit organization led by Startup: Education, Facebook CEO Mark Zuckerberg’s fund for education, with participation from the Gates Foundation. In support of the E-rate modernization effort, the Education Superhighway has dedicated \$9 million in a second round of funding to help schools test and secure better internet connections and to light up dark fiber. <a href="http://www.educationsuperhighway.org/">http://www.educationsuperhighway.org/</a></li> <li>• <b>Corporate support for Connected initiative</b><br/>Donations of products and services administered by individual corporations. <a href="http://www.whitehouse.gov/issues/education/k-12/connected">http://www.whitehouse.gov/issues/education/k-12/connected</a></li> </ul> |
| Rural health care                              |         | <ul style="list-style-type: none"> <li>• <b>USDA Distance Learning and Telemedicine Loan and Grant Program (DLT)</b><br/>Loans, grants and loan/grant combinations to entities providing education or medical care to rural consumers through telecommunications. Grants awarded annually in competitive process after NOFA; loans and loan/grant combos noncompetitive and accepted year-round. <a href="http://www.rurdev.usda.gov/utp_dlt.html">http://www.rurdev.usda.gov/utp_dlt.html</a></li> </ul>                                                                                                                                                                                                                                                                                                                                  |
| Emergency response                             | Federal | <ul style="list-style-type: none"> <li>• <b>FirstNet</b><br/>Funding for development of first nationwide interoperable public safety network, open for secondary uses. <a href="http://www.firstnet.gov/">http://www.firstnet.gov/</a></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

**5.2 USF RESOURCES**

**General Information**

<http://www.fcc.gov/encyclopedia/universal-service>

<http://www.usac.org/default.aspx>

*Auctions*

[http://wireless.fcc.gov/auctions/default.htm?job=auctions\\_home](http://wireless.fcc.gov/auctions/default.htm?job=auctions_home)

*Filings*

<http://www.usac.org/about/tools/fcc/filings/default.aspx>

*Mapping*

<http://www.fcc.gov/maps>

*Orders*

<http://www.usac.org/about/tools/fcc/default.aspx>

*Press Releases*

<http://transition.fcc.gov/>

**Program Database Tools**

<http://www.usac.org/about/tools/default.aspx>

[https://apps.fcc.gov/edocs\\_public/edocsLink.do?mode=advance&type=n](https://apps.fcc.gov/edocs_public/edocsLink.do?mode=advance&type=n)